CHAPTER 6
RESPONSE TO COMMENTS

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This chapter provides a summary of the comments received on the Draft PEIS. A list of the agencies, organizations, and individuals who submitted comments is provided. Both general and specific comments and the BLM's responses to those comments are presented.

Summary of Comments on the Draft Programmatic EIS

A total of 41 individual comment documents on the Draft PEIS and supporting materials were received during the public comment period from June 19, 2015, through August 3, 2015. Comments were received via letter, electronic mail, and facsimile. Thirty-nine electronic mails, 1 facsimile, and 1 letter were received (not counting duplicates of the same document sent via various methods).

All comment documents received on the Draft PEIS, as well as supporting materials, are provided on the CD of supporting documentation provided with this PEIS and included in the Administrative Record.

The project interdisciplinary team reviewed all comment documents and identified substantive comments (as defined in the BLM NEPA Handbook H-1790-1) requiring specific responses. A comment received a specific response if it 1) was substantive and related to inadequacies or inaccuracies in the analysis or methodologies used; 2) identified new impacts or recommended reasonable new alternatives or mitigation measures; and/or 3) involved substantive disagreements on interpretation of significance. Numerous comment letters in support of use of the three new herbicides were received. These comment letters were noted by the BLM and have been included in Appendix F, but they were not considered substantive comments and therefore did not receive responses.

After all comment documents were reviewed, each substantive comment was assigned a code and identified by topic, then distributed to the appropriate member of the interdisciplinary team for response. A total of 98 substantive comments were identified and responded to.

Table 6-1 shows the breakdown of substantive comments by topic. More than half (51 percent) of the comments were concerned with the herbicide effects analysis, ERAs, the scope of the analysis, effects to water resources and water quality, the purpose and need for the proposed action, and BLM herbicide treatment programs.

Commenting Agencies, Organizations, and Individuals

Written or oral comments were received from the agencies, organizations, and individuals listed following Table 6-1. This list includes all commenters, regardless of whether the comments they provided were substantive. The number following the name of the organization or individual(s) below is a discrete identification number that was used in the response to comments process.

Specific Comments and Responses

Individual comments and responses are provided after the list of respondents. They are organized by subject headings that are similar to those in the PEIS, based on the content of the comment, and within each subject heading they are listed in order of comment number. In some cases, comments have been modified slightly to make them clearer to the reader. These modifications are enclosed in brackets. Additionally, grammatical and spelling corrections have been made, as appropriate.

Note that in the comment documents provided in Appendix F, substantive comments are indicated with gray highlighting, and the corresponding comment number and PEIS subject heading are provided in bracketed text.

The text of the Final PEIS has been revised or edited where appropriate to address the comments. Information on how specific comments were addressed and where they are addressed within the Final PEIS is detailed in the response to each comment.

TABLE 6-1
Comment Response Summary

Topic	Percent of Comments
Herbicide effects analysis	13.3
Ecological risk assessment	10.2
Scope of analysis	8.2
Effects to water resources/water quality	7.1
Purpose and need for the proposed action	6.1
BLM herbicide treatment programs	6.1
Herbicide active ingredients	4.1
Effects to fish and other aquatic organisms	4.1
Effects to social and economic values	4.1
Herbicide treatment standard operating procedures and guidelines	3.1
Effects to vegetation	3.1
Effects to paleontological and cultural resources	3.1
Public involvement	3.1
Relationship to statutes, regulations, and policies	2.0

Topic	Percent of Comments
Interrelationships and coordination with agencies	2.0
Alternative C – No Aerial Application of New Herbicides	2.0
Coordination and education	2.0
General environmental consequences	2.0
Effects to air quality	2.0
Effects to wetlands and riparian areas	2.0
Effects to wildlife	2.0
Effects to human health and safety	2.0
Description of the alternatives	1.0
Alternatives considered but not analyzed further	1.0
Mitigation	1.0
Affected Environment – air quality and climate	1.0
Effects on soil resources	1.0
Cumulative effects analysis	1.0

Agency/Group/Individual	Document Number
Federal Agencies	
U.S. Environmental Protection Agency	39
State Agencies	
Arizona Game and Fish Department	23
Nevada Division of Environmental Protection, Bureau of Water Pollution Control	41
Nevada State Historic Preservation Office	37
New Mexico Department of Agriculture	20
New Mexico Vegetation Management Association	08
Wyoming Weed and Pest Council	38
County Agencies	
Adams County Weed Control (Idaho)	40
Fremont County Weed and Pest District (Wyoming)	13
Lincoln County Conservation District of Nevada	16
Teton County Weed and Pest Control District (Wyoming)	31
City Agencies	
Carlsbad Soil and Water Conservation District (New Mexico)	25
Industry and Related Groups	
Dow AgroSciences	29
Idaho Power	15

Conservation Groups and Related Groups

Individuals

Responses to Comments

Proposed Action and Purpose and Need, Purpose and Need for the Proposed Action

03-02
Eklund, Janelle

Comment: Truth be known, most broadleaf plants are not weeds nor are they noxious…Many of them are also beneficial to us, nutritionally speaking. Some so-called weeds contain ten to one hundred times the nutrition of modern lettuces and green vegetables.

Response: The comment is outside the scope of the PEIS, which addresses the proposed use of three new herbicides in the BLM's vegetation management program. As stated in Chapter 1 of the PEIS, the BLM considers plants to be weeds when they degrade the health of public lands and affect resources such as wildlife habitat, native plant communities, threatened and endangered species habitat, soil, water, and recreation.

03-05
Eklund, Janelle

Comment: Don't think of weeds as weeds. I have studied wild plants and herbs and know they have many nutritional and medicinal uses. Our society is too focused on getting rid of that which we are ignorant about and do not want to take the time to learn about. Take a lesson from the plants. Please DO NOT use any herbicides anywhere!

Response: The comment is outside the scope of the PEIS, which addresses the proposed use of three new herbicide active ingredients in the BLM's vegetation management program. As stated in Chapter 1 of the PEIS, the BLM considers plants to be weeds when they degrade the health of public lands and affect resources such as wildlife habitat, native plant communities, threatened and endangered species habitat, soil, water, and recreation. Regardless of the decision made on whether to utilize the new herbicides, the BLM would continue to use herbicides as one type of vegetation treatment.

10-01
Free, Jim

Comment: Herbicide approval for Milestone and other similar products needs to be moved forward and approved for use on [USDOI] lands. [Milestone] has been approved for use on USDA National Forest Lands for years with no environmental effects. The tax payers are not being served by having the [USDOI] do the same study with the same results. It is costing the managers undo expense in managing invasive species due to poor decision making at the upper level of government. The spread of invasive species on BLM and Parks is resulting in millions of dollars in loss of habitat and native vegetation. The cost to treat is way beyond any reason for delaying risk assessment work for this many years. This lack of decision making is what gives our agencies a bad name and add fuels to the fire that the federal government is inept in managing lands and the states should take it over. Please make a decision even if it is wrong.

Response: Any approvals made by the USDA Forest Service to use aminopyralid, fluroxypyr, and rimsulfuron on National Forest lands do not apply to vegetation treatments on BLM-administered public lands. The BLM must still complete its own EIS to determine the potential effects of using these active ingredients on BLM-administered lands, and make a decision about whether to allow their use.

26-07
Rehfeldt, Melissa
36-07
Schumacher, Michelle

Comment: The herbicides the BLM wants to add will be used primarily for improving the forage value of rangelands. BLM land managers plan to use aminopyralid to control thistle species, fluroxypyr for prickly pear and kochia, and rimsulfuron on annual grasses like cheatgrass. These particular plants are considered invasive in rangelands because they decrease the amount of forage available for cattle and sheep. However, the BLM doesn't own cattle or sheep, it leases land to people who do. By adding these three herbicides, the BLM will use public money to maintain the viability of private ranching interests. In addition to managing land for the direct benefit of grazing interests, the BLM also maintains [ROWs] for power lines, oil and gas pipelines, and roads for extraction of natural gas, oil, timber, and minerals. The BLM maintains over 106,000 rights of way that help keep the resource extractive industries in business. Maintaining [ROWs] with herbicide represents yet another example of public funds being used for private gain at the expense of ecological integrity.

Response: The BLM's reasons for adding the three new active ingredients are presented in Chapter 1 of the PEIS, under Purpose and Need for the Proposed Action. The new active ingredients have less environmental and human health risks than some of the currently approved herbicides, provide increased options for management of annual grasses, and address herbicide resistance by certain species. While the forage value of rangelands may be improved as a result of herbicide treatments with aminopyralid, fluroxypyr, and rimsulfuron, the identified purposes of vegetation treatments are to reduce the risk of wildfires, stabilize and rehabilitate fire-damaged lands, and improve ecosystem health on public lands. The concerns raised in the comment are outside the scope of the PEIS. Regardless of the decision made about whether to utilize the three new active ingredients, the BLM will continue to implement vegetation treatments with herbicides that have already been approved for use. The PEIS does not evaluate policies and programs associated with land use activities authorized by the BLM (such as livestock grazing and natural gas, oil, timber, and mineral extraction), or address how funds are spent. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS.

26-08
Rehfeldt, Melissa
36-08
Schumacher, Michelle

Comment: The apparent threats that invasive species pose to ecosystems need to be placed in context of the ecological dynamics where they are found. Invasive species provide an ecological snapshot of above and below ground processes playing out in real time. If kochia, pricklypear, Russian thistle, and cheatgrass are growing and spreading in western states, then wouldn't it be prudent to consider why they are thriving. Plants don't have malevolent intent or characteristics - they are making use of available niches. If we treat invasive species as ecological indicators rather than problems, then it is possible to advance land management practices that make it less likely that invasive species will thrive.

Response: The BLM recognizes that land management practices play a role in the introduction and spread of invasive species as well as in preventing their establishment. However, evaluating these practices is outside the scope of this PEIS. The BLM is making a decision on whether to add aminopyralid, fluroxypyr, and rimsulfuron to the list of active ingredients approved for use on public lands under an already established vegetation management program.

Vegetation treatments using chemical and non-chemical methods are one component of a strategy for addressing invasive vegetation on public lands, which also includes prevention, inventory, and rehabilitation. Natural occurrences such as frequent wildfire and other surface disturbances have increased invasive non-native grass species

exponentially. The BLM uses current land use plans and site-specific planning to map out measures to avoid further establishment to reduce the spread of invasive species.

35-05
Alaska Community Action on Toxics

Comment: We find that the BLM does not provide justification for the use of the proposed new herbicides, nor does the agency provide an adequate alternatives assessment for non-chemical vegetation management options.

Response: The BLM feels that the efficacy and low environmental and human health risks of aminopyralid, fluroxypyr, and rimsulfuron provide a justification for their use on public lands. The proposed new herbicides have lower toxicity to humans, fish, and wildlife than several of the herbicides currently approved for use by the BLM.

Alternatives entailing use of non-chemical management options were not applicable to the current PEIS, which is specific to aminopyralid, fluroxypyr, and rimsulfuron. The BLM already uses herbicides as well as non-chemical methods to manage vegetation on public lands. These non-herbicide treatment methods were assessed in the 2007 *Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Report* (USDOI BLM 2007c) and earlier EISs referenced in that document. Regardless of the decision made on whether to utilize the new herbicides, the BLM would continue to use an Integrated Pest Management approach for managing vegetation.

Proposed Action and Purpose and Need, Scope of Analysis

04-01
Vandeman, Mike

Comment: Humans aren't smart enough to make safe chemicals. Manual control [as an alternative to herbicides] is relatively harmless, and guaranteed to work.

Response: The BLM agrees that manual control is an effective method for treating unwanted vegetation. The BLM uses an Integrated Pest Management approach to manage invasive vegetation, which includes manual control and other non-herbicide treatment methods. These non-herbicide treatment methods were assessed in the 2007 *Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Report* (USDOI BLM 2007c) and earlier EISs referenced in that document. Non-herbicide treatment methods are outside the scope of the current PEIS. The BLM is making a decision about whether to add three new active ingredients to its list of herbicides approved for use, and will continue to use herbicide treatment methods regardless of the decision made in the ROD for the PEIS. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS.

12-03
Eller, Barb

Comment: Attention must be directed to the nonchemical management of weeds.

Response: Non-chemical methods for managing weeds are outside the scope of the PEIS. Non-herbicide treatment methods, such as manual, mechanical, and biological control, and fire, are used by the BLM, in addition to chemical control to manage invasive plants. They were assessed in the 2007 *Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic Environmental Report* (USDOI BLM 2007c) and earlier EISs referenced in that document. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS.

26-11
Rehfeldt, Melissa
36-11
Schumacher, Michelle

Comment: Unmanaged or poorly managed open range grazing is one of the main contributors to the proliferation of invasive species in western rangelands. An ecologically based, long-term solution to invasive species management would change the way grazing is practiced on public lands. The BLM should lease land to grazers that practice holistic, planned grazing rather than open range grazing. Ranchers who practice holistic grazing find that their weed 'problems' disappear as their soil improves, which also increases water holding capacity, stores carbon in the soil, [and] improves diversity and abundance of forage plant species, leading to increased animal health, and eventually higher economic returns.

Response: The concerns raised in the comment are outside the scope of the PEIS. The PEIS addresses the effects of aminopyralid, fluroxypyr, and rimsulfuron use under existing vegetation management programs on human health and public land resources. It does not discuss non-herbicide methods of invasive species management. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS. Grazing plans are specific to allotments, which are developed at the field office level, based on existing land use plan goals and objectives, and following the grazing regulations at 43 CFR 4100. In some instances, the BLM uses grazing as a tool for controlling invasive plants as one method of vegetation management.

26-10
Rehfeldt, Melissa
36-10
Schumacher, Michelle

Comment: Another option would be to reinstate traditional indigenous land management practices like low-intensity burning to encourage populations of non-domesticated grazing animals like deer, elk, [pronghorn] antelope, buffalo [American bison], as well as top predators like wolves and cougars.

Response: Non-herbicide treatments are outside the scope of the PEIS. The BLM is making a decision about whether to add three new active ingredients to its list of herbicides approved for use. Regardless of any decisions made in the ROD for the PEIS, the BLM will continue to use both herbicide and non-herbicide treatment methods to manage invasive vegetation on public lands. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS.

30-01
Wardlaw, Katy

Comment: I am against the Bureau of Land Management allowing the three new herbicides to be used to control invasive species in the western states. The new herbicides are toxic to the environment and the use of herbicides to control invasive species is a short-term solution. The mission of the BLM is to protect public lands for future generations. To do that the BLM needs to put a stop to the grazing practices which are degrading the land and allowing invasive species to become established.

Response: The potential toxicity of aminopyralid, fluroxypyr, and rimsulfuron to the environment is discussed in Chapter 4 of the PEIS, under the various resource sections. The ERAs prepared in support of the PEIS evaluate the toxicity of these active ingredients to various environmental receptors via various exposure pathways. Risk assessments determined that the three new active ingredients are of lower toxicity than many of the active ingredients that are currently approved for use on public lands.

Use of herbicides is one method utilized by the BLM to manage invasive vegetation on public lands. Within an Integrated Pest Management program, herbicides have consistently been demonstrated to be effective for vegetation control alone or in combination with other treatment tools, such as mechanical, fire, biological, and manual techniques, including passive management.

Grazing practices on public lands are outside the scope of this PEIS. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS. The effects of livestock grazing on rangeland health has been previously assessed in the October 2004 *Proposed Revisions to Grazing Regulations for the Public Lands* (FES 04-39; USDOI BLM 2004b). The livestock grazing program is also assessed in Resource Management Plan EISs, which outline the goals and objectives for landscape health that livestock grazing must meet. Limitations or restrictions on grazing due to the spread of invasive species are determined through activities such as allotment monitoring, permit authorizations, and watershed assessments. Grazing use restrictions for specific areas are identified through terms and restriction of livestock grazing permits, as determined through allotment evaluations and monitoring conducted under the grazing regulations at 43 CFR 4100.

35-04
Alaska Community Action on Toxics

Comment: We believe that there are effective and viable alternatives to the use of herbicides for vegetation management.

Response: Non-herbicide treatments are outside the scope of the PEIS. The BLM is making a decision about whether to add three new active ingredients to its list of herbicides approved for use. Regardless of any decisions made in the ROD for the PEIS, the BLM will continue to use both herbicide and non-herbicide treatment methods to manage invasive vegetation on public lands. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS.

35-16
Alaska Community Action on Toxics

Comment: Non-chemical methods exist that are effective and economical. New technologies and products have been developed that provide safe, economical alternatives to the use of herbicides.

Response: The BLM agrees that there are non-chemical means of controlling invasive plants that are effective and economical. The BLM utilizes both chemical and non-chemical treatment methods to manage vegetation on public lands. Within an Integrated Pest Management program, herbicides have consistently been demonstrated to be effective for vegetation control alone or in combination with other treatment tools, such as mechanical, fire, biological, and manual techniques, including passive management. When developing treatment programs, the BLM considers all available management options, and then selects the method or combination of methods that optimizes vegetation control with respect to environmental concerns, effectiveness, and cost of the treatment.

The use of non-chemical methods is outside the scope of the PEIS. Regardless of any decisions made about the use of aminopyralid, fluroxypyr, and rimsulfuron, the BLM will continue to use both herbicide and non-herbicide treatment methods to manage invasive vegetation on public lands. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS.

35-18
Alaska Community Action on Toxics

Comment: We assert that there are new and proven methods and technologies that preclude the need for synthetic herbicides, including new acetic acid-based products, improved infrared steam technology, [and] cultural and biological control methods. We maintain that an integrated non-chemical approach would be highly effective and preferable to threatening environmental and community health.

Response: Non-herbicide treatments are outside the scope of this PEIS. The BLM is making a decision about whether to add three new active ingredients to its list of herbicides approved for use. Regardless of any decisions made in the ROD for the PEIS, the BLM will continue to use both herbicide and non-herbicide treatment methods to manage invasive vegetation on public lands. A paragraph has been added to Chapter 1 of the PEIS, under Study Area and Scope of Analysis, that more clearly discusses the scope of the PEIS.

Proposed Action and Purpose and Need, Relationship to Statutes, Regulations, and Policies that Influence Vegetation Treatments

35-03
Alaska Community Action on Toxics

Comment: The use of herbicides violates Article 29 of the *United Nations Declaration on the Rights of Indigenous Peoples* to ensure that disposal of hazardous materials shall not take place in the lands and territories of our Indigenous People without their free prior and informed consent.

Response: The referenced section of the United Nations Declaration of the Rights of Indigenous Peoples says that "states shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent" (United Nations 2008). Applying herbicides in accordance with the label instructions does not constitute "disposal of hazardous materials." Herbicides would be applied only as needed to manage populations of invasive plant species, with the intent of benefiting native species and restoring native plant communities.

As with all vegetation management actions, the BLM would consult with Native American tribes, Alaska Native groups, and Alaska Native Corporations at the local level during the NEPA process for all site-specific projects involving the use of aminopyralid, fluroxypyr, and rimsulfuron.

39-01
U.S. Environmental Protection Agency

Comment: In May 2015, the Pollinator Health Task Force issued a *National Strategy to Promote the Health of Honey Bees and Other Pollinators* which tasked federal agencies with helping to improve pollinator health. In the strategy, BLM is tasked with including pollinator friendly plants in land management programs and identifying plant species that are most beneficial to pollinators to consider in regional development programs. In addition, the U.S. Forest Service and BLM issued a joint document highlighting pollinator-friendly [BMPs] for federal lands which guides federal land managers to effectively and efficiently use available resources and engage public and private partnerships in taking action for the conservation and management of pollinators and pollinator habitat on federal lands. The final PEIS should briefly discuss these new resources and describe how activities involving the use of herbicides for vegetation management, including the addition of these three herbicides, may impact implementation of these best practices and the national strategy.

Response: The document referenced in the comment was published after the Draft PEIS was completed. The text of the PEIS has been changed to include the new information requested by the comment. Under Chapter 4, Wildlife, the Standard Operating Procedures section has been expanded to include SOPs from the 2007 PEIS that pertain directly to pollinators, to mention the National Strategy, and to provide a link to the website where the *Draft Pollinator-Friendly Best Management Practices for Federal Lands* document (USDOI and USDA 2015) can be found and referenced during project development. The Summary of Herbicide Impacts subsection has also been modified to include a brief discussion of the potential for adverse effects to pollinators that utilize target plant species, as well as the potential for beneficial effects

by promoting native plant communities that have higher forb diversity than invasive species monocultures.

The BLM already has SOPs in place to protect pollinators that align with many of the actions listed in the federal BMP document under the Pesticide Use BMP. Additionally, herbicide treatments designed to manage invasive plant species address the guidance provided in the BMP document that links removal of invasive vegetation with increasing pollinator abundance and diversity. During project development and environmental analysis at the local level, the BLM would consider the potential for site-specific herbicide treatments to affect pollinators, and would consult the BMP document, as well as develop additional project-specific mitigation measures, as needed.

Proposed Action and Purpose and Need, Interrelationships and Coordination with Agencies

39-11
U.S. Environmental Protection Agency

Comment: [The] BLM should consult with each state lead agency responsible for pesticide regulations prior to use where soils are susceptible to wind erosion or there are sensitive crops grown in the area in order to minimize unintended impacts.

Response: As discussed in Chapter 1 of the document, the PEIS provides a broad, programmatic level environmental impact analysis to which more specific environmental documents can be tiered. The discussion on tiering in the PEIS, under Study Area and Scope of Analysis, has been expanded to more clearly describe the various levels of environmental analyses and the tiering process. The concerns raised in the comment would be addressed at the local level during the NEPA process for site-specific vegetation treatments. At the local level, state agencies would have the opportunity to provide input on proposed herbicide treatments, and the BLM would take into account wind erosion and the site-specific potential for off-site movement of soils treated with a particular herbicide active ingredient when planning treatments and determining suitable buffers and mitigation. The BLM would also take into account all applicable state and local regulations at the local level.

41-01
Nevada Division of Environmental Protection, Bureau of Water Pollution Control

Comment: The project may be subject to [Bureau of Water Pollution Control] permitting. Permits are required for discharges to surface water and groundwaters of the State (Nevada Administrative Code NAC 445A.228). [Bureau of Water Pollution Control] permits include, but are not limited to, the following:

- Stormwater Industrial General Permit
- De Minimis Discharge General Permit
- Pesticide General Permit
- Drainage Well General Permit
- Temporary Permit for Discharge to Groundwaters of the State
- Working in Waters Permit
- Wastewater Discharge Permits
- Underground Inspection Control Permits
- Onsite Sewage Disposal System Permits
- Holding Tank Permits

Please note that discharge permits must be issued from the [Nevada Division of Environmental Protection] before construction of any treatment works (Nevada Revised Statute 445A.585).

Additionally, the applicant is responsible for all other permits that may be required, which may include, but not be limited to:

• Dam Safety Permits	Division of Water Resources
• Well Permits	Division of Water Resources
• 401 Water Quality Certification	[Nevada Division of Environmental Protection]
• 401 Permits	U.S. Army Corps of Engineers
• Air Permits	[Nevada Division of Environmental Protection]
• Health Permits	Local Health or State Health Division
• Local Permits	Local Government

Response: The BLM is aware that vegetation treatment projects involving use of the three new herbicides may be subject to local permitting requirements. The need for permits would be determined on a site-specific basis, and the BLM would obtain all necessary permits prior to implementing any treatment actions involving use of herbicides.

Alternatives, Introduction

03-01
Eklund, Janelle

Comment: Please do not use herbicides to control what you call "noxious weeds." We have already learned from other herbicides that were are just killing ourselves but we never seem to learn from our mistakes. For example, it is proven that Roundup also kills many crop plants along with 'pesky weeds.' So the solution was to use genetic modification (GM) technology to create plants that would withstand the poisons of Roundup. Nature fought back and now we are inundated with super weeds and super bugs, resistant to these poisonous herbicides.

Response: The development of herbicide resistance is an issue of great interest in production agriculture. Several plant species have been documented as being resistance to particular herbicide active ingredients. Several factors contribute to the development of an herbicide-resistant population of a plant species, including the characteristics of the active ingredient, the genetic makeup of the plant species, and the timing and frequency of the herbicide application.

The BLM is aware that herbicide resistance has the potential to develop within populations of certain plant species that occur on BLM-administered lands. The BLM has taken steps to prevent and address herbicide resistance. As part of the required Integrated Pest Management and Pesticide Applicator Certification Training, the BLM discusses the benefits of incorporating mechanical, manual, and biological control into the overall herbicide resistance management strategy of a particular project. The BLM provides training on the different mechanisms of activity of approved herbicide active ingredients, and on the benefits of rotational use of herbicides with different mechanisms of activity. In addition to this training, the BLM continues to monitor herbicide application sites for herbicide resistant plant populations, and takes steps to address herbicide resistance, as needed.

As stated in Chapter 1 of the PEIS, under Purpose and Need for the Proposed Action, one reason that the BLM wishes to utilize the new active ingredients is to address herbicide resistance by certain species to active ingredients currently approved for use.

14-01
Oregon Wild

Comment: Oregon Wild does not object to judicious use of herbicides to control high-priority infestations of non-native weeds on public lands, but we do not want widespread chemical use to be used to cover up the ecological damages caused by weed-spreading activities such as livestock grazing, logging, mining, OHVs, fire-suppression etc. Applying toxic chemicals containing under-tested active ingredients and undisclosed and untested inert ingredients should be avoided as much as possible and used only as a last resort. Executive Order 13112 of February 3, 1999 [Invasive Species] requires BLM to focus first on prevention of the spread of invasive species such as noxious weeds. BLM should therefore first focus on weed prevention, which means: avoid and minimize the most common weed vectors, such as livestock and OHVs; avoid and minimize soil disturbance caused by logging, road construction, grazing, OHVs, fuel reduction, fire-suppression, firewood gathering, mining, etc.; [and] avoid and minimize disturbance of healthy native vegetation cover caused by logging, road construction, grazing, OHVs, fuel reduction, fire-suppression, firewood gathering, mining, etc., including maintain forest canopy cover that helps suppress weeds. BLM should prioritize conservation activities that help avoid the establishment and spread of weeds thus minimizing the need for, and use of, chemical herbicides. BLM must therefore minimize disturbance of soil and native vegetation caused by livestock grazing, logging, yarding, log hauling, road work, OHVs, mining, etc.

Response: Executive Order 13112 requires the BLM to "prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause." Additionally, the FLPMA of 1976 requires the BLM to manage public lands and their resource values to support multiple uses, including the various examples listed in this comment. Therefore, the BLM must allow for the land uses mentioned in the comment while at the same time managing invasive plant species.

While the BLM agrees that the weed vectors identified in the comment contribute to the spread of invasive plants on public lands, they are not the only weed vectors that should be considered. The primary weed vectors are wind, water, wildlife, and self-propagation. Secondary factors are ground disturbance and fire. Human influences are responsible for much of the spread and establishment of weeds we know today. Many weeds have spread onto public lands from adjacent private lands without help from livestock, OHV recreationists, or other commodity producers. Additionally, noxious weeds and other invasive species are gaining a foothold in many protected special areas such as wilderness study areas and wilderness areas that have little or no history of livestock grazing, timber harvest, OHV use, or oil and gas exploration. Many intact and healthy ecosystems have invasive and noxious weeds that cannot be attributed to any specific cause or land use.

The BLM's Weed Management and Invasive Species Program follows a strategy that includes prevention, inventory, control, and rehabilitation. The BLM's first line of defense is prevention, followed by early detection and rapid response, both of which are identified in the BLM's *Partners Against Weeds Action Plan* (USDOI BLM 1996) and *Pulling Together: National Strategy for Invasive Plant Management* (USDOI BLM 1998). Steps that the BLM takes to prevent the establishment and spread of invasive plants were discussed in the 2007 PEIS, which was incorporated by reference into the current PEIS. Examples of prevention efforts include vehicle washing, animal grooming and quarantine, use of weed-free hay and mulch, and public and user education programs at field offices. Additionally, during planning and development of projects with the potential to spread invasive plants, the BLM identifies steps to minimize these risks.

The 2007 PEIS included the following SOP, which has been carried forward into the current PEIS: "Identify the most appropriate treatment method. If chemicals are the appropriate treatment, then select the chemical that is the least damaging to the environment while providing the desired results." This SOP can be found in the introductory section to Chapter 4 of the PEIS, under How the Effects of the Alternatives Were Estimated, Assumptions for Analysis.

The PEIS does not evaluate policies and programs associated with land use activities authorized by the BLM, including those listed in the comment, and does not make land use allocations or amend land use plans. The BLM is making a decision on whether to add aminopyralid, fluroxypyr, and rimsulfuron to the list of active ingredients approved for use on public lands under an already established vegetation management program. Regardless of the decision that is made on the use of these three active ingredients, herbicides will continue to be used, along with other, non-chemical treatment methods, to manage invasive vegetation on public lands.

28-01
Copper Country Alliance

Comment: Unless there is no effective non-herbicide alternative, herbicides should not be employed. Herbicides should not be used simply because they are the cheapest option.

Response: The decision about whether to utilize herbicide treatments or non-chemical treatment methods is made at the local level after evaluating all of the options available to treat the target species. Economic considerations are just one factor considered when planning a vegetation treatment project. This process is discussed in detail in the 2007 PEIS, and incorporated by reference and discussed briefly in the current PEIS (in Chapter 2, under Herbicide Treatment Standard Operating Procedures and Guidelines). As part of herbicide treatment planning, the BLM is required to thoroughly evaluate the need for chemical treatments and their potential for impact on the environment.

The 2007 PEIS included the following SOP, which has been carried forward into the current PEIS: "Identify the most appropriate treatment method. If chemicals are the appropriate treatment, then select the chemical that is the least damaging to the environment while providing the desired results." This SOP can be found in the introductory section to Chapter 4 of the PEIS, under How the Effects of the Alternatives Were Estimated, Assumptions for Analysis.

28-02
Copper Country Alliance

Comment: Unless the threat imposed by the invasive plant to natural ecosystems is significant, herbicides should not be employed. Non-native dandelions, for instance, have been in Alaska for a century. They are scattered among our native flowers and do not seem to take over. Elodea, on the other hand, can quickly alter entire water bodies.

Response: The steps that the BLM follows when deciding whether to treat invasive plants are described in detail in the 2007 PEIS, under Vegetation Treatment Planning and Management, Site Selection and Treatment Priorities, and incorporated by reference into the current PEIS. The BLM considers the threats to natural ecosystems when determining whether a given population should be treated. The species and its potential to spread aggressively and alter native plant communities are considered, as well as its location and the size of the infestation, among other factors.

As discussed in Appendix C of the PEIS, in the ANILCA Analysis of Subsistence Impacts, it is expected that no more than 1,000 acres of public lands in Alaska would be treated with herbicides in any year. Identified projects target invasive plants along roads and other heavy use areas to prevent their spread into more pristine areas.

28-03
Copper Country Alliance

Comment: When herbicides are used, always use the ones with the least "collateral damage" to non-targeted organisms, as long as they are still effective.

Response: During development of site-specific treatment plans, the BLM considers the larger land management context in which the treatment will occur. This process was discussed in the 2007 PEIS and PER, and would carry over to vegetation treatment plans involving the three new active ingredients, should they be approved for use in the ROD. The 2007 PEIS included the following SOP, which has been carried forward into the current PEIS: "Identify the most appropriate treatment method. If chemicals are the appropriate treatment, then select the chemical that is the least damaging to the environment while providing the desired results." This SOP can be found in the introductory section to Chapter 4 of the current PEIS, under How the Effects of the Alternatives Were Estimated, Assumptions for Analysis

39-10
U.S. Environmental Protection Agency

Comment: The Draft PEIS outlines the process the BLM considers to determine the suitability of the herbicide at that location, including herbicide and target site characteristics. As a part of the site-suitability process, [US]EPA recommends that BLM contact the USDA Natural Resources Conservation Service to determine whether the application sites are highly erodible or the soil is prone to wind erosion (light, sandy soils).

Response: As discussed in Chapter 1 of the document, the PEIS provides a broad, programmatic level environmental impact analysis to which more specific environmental documents can be tiered. The discussion on tiering in the PEIS, under Study Area and Scope of Analysis, has been expanded to more clearly describe the various levels of environmental analyses and the tiering process.

The soil characteristics of proposed treatment sites would be considered at the local level during the NEPA process for site-specific herbicide treatments. Chapter 4 of the PEIS, under Subsequent Analysis before Projects, discusses how local land managers would utilize localized data and information to identify methods and procedures best suited to local conditions. It is noted that the USDA Natural Resources Conservation Service is a source of information regarding the soil aspects of a proposed site.

Alternatives, Herbicide Active Ingredients Evaluated Under the Proposed Alternatives

26-01
Rehfeldt, Melissa
36-01
Schumacher, Michelle

Comment: Aminopyralid remains stable even after passing through an animal's digestive system. Deer, elk, or cows that graze where aminopyralid has been sprayed will carry the still-active herbicide far and wide through their manure.

Response: The aminopyralid label contains specific restrictions associated with the use of hay and straw from fields or other areas treated with this active ingredient. It states that there are no grazing restrictions following its use, but does point out that the urine and manure associated with grazing animals may contain enough aminopyralid to cause injury to sensitive broadleaf plants for 3 days following grazing. It is hard to determine the distance that wildlife would travel in the 3 days following a grazing event of an area treated with aminopyralid, and whether urine and manure of these animals would come in contact with a sensitive broadleaf plant species. However, the PEIS does include a statement acknowledging the possibility of this type of impact to non-target plants in Chapter 4, under Vegetation.

35-12
Alaska Community Action on Toxics

Comment: [US]EPA issued a conditional registration for aminopyralid in 2005 and it is not scheduled for review until 2020. Aminopyralid should not be categorized by BLM as a "reduced risk" herbicide because its evaluation is incomplete.

Response: The reduced risk designation is made by the USEPA, not the BLM. The term "reduced risk" refers to a registration program by the USEPA, which expedites the review and regulatory decision-making of conventional pesticides that pose less risk to human health and the environment than existing conventional alternatives. More information on this program can be found at: http://www2.epa.gov/pesticide-registration/conventional-reduced-risk-pesticide-program.

Aminopyralid met the requirements for inclusion into the reduced risk program. This program expedites the review and regulatory decision-making process, but does not alter the necessary testing requirements associated with preparing and submitting a registration packet to the USEPA.

Regardless of the USEPA's reduced risk registration, the BLM still completed the same level of risk analysis as it does for all herbicides proposed for use on public lands. This risk analysis can be found in the ERA for aminopyralid.

26-04
Rehfeldt, Melissa
36-04
Schumacher, Michelle

Comment: Rimsulfuron is an acetolactate synthase-inhibitor, a type of herbicide that kills plants by interfering with amino acid and DNA synthesis. Recent research demonstrates that animals and people have very similar mechanisms of amino acid synthesis, and may be affected by acetolactate synthase-inhibiting herbicides.

Response: A discussion of rimsulfuron's acetolactate synthase-inhibiting mode of action is provided in Chapter 2 of the PEIS, under Herbicide Active Ingredients Evaluated under the Proposed Alternatives. Potential risks to wildlife and human health are discussed in Chapter 4 of the PEIS, and are based on information from the HHRAs and ERAs for rimsulfuron, both of which have been included as supporting documents to the PEIS. As stated in the PEIS, rimsulfuron does not pose a risk to wildlife or the public. It does pose a low to moderate human health risk to occupational receptors (i.e., herbicide applicators) under accidental exposure scenarios that are preventable through the use of proper herbicide handling and application procedures and other SOPs. The comment does not provide a link or citation for the research mentioned. However, the following is stated in the ERA for rimsulfuron: "according to USEPA ecotoxicity classifications presented in registration materials, rimsulfuron poses little to no acute toxicity hazard to terrestrial animals (mammals, birds, and honeybees [*Apis mellifera*]; USEPA 2007). The rimsulfuron mode of action is to inhibit acetolactate synthase (also known as acetohydroxyacid synthase), a key enzyme in biosynthesis of certain amino acids in plants. As this enzyme only occurs in plants, rimsulfuron has little toxic impact on mammals, birds, fish, or aquatic invertebrates." Rimsulfuron does not interfere with the biosynthesis of amino acids in animals and people like it does in plants.

35-19
Alaska Community Action on Toxics

Comment: On August 1, 2006, the Attorney General of Alaska announced that Alaska "joined with 13 other states and the U.S. Virgin Islands to petition the Environmental Protection Agency ([US]EPA) to require pesticide manufacturers to disclose on the label of their product all hazardous ingredients. The [US]EPA currently requires that pesticide labels disclose only the product's "active" ingredients that contain toxic materials intended to kill insects, weeds, or other target organisms. Pesticide products also contain many other "inert" ingredients, which are intended to preserve or improve the effectiveness of the pesticides' active ingredients. These "inert" ingredients may be toxic themselves..." The news release further states that "people who use or are impacted by use of a pesticide should have notice of all that product's potential health risks." Thus, it would be wrong for BLM to apply herbicides for which the manufacturers do not disclose ingredients that may harm human health.

Response: In response to the referenced petitions to require pesticide manufacturers to disclose all ingredients on their labels, the USEPA sought input from stakeholders from the pesticide industry, environmentalists, and other experts on pesticide labeling and "inert ingredients." One of the recommendations from the stakeholder meetings was to develop a rule to disclose the names of each of the "other inert ingredients" in pesticide products. The recommendation would require the USEPA to initiate rulemaking and amend 40 CFR 156.10(g) to disclose "other inert ingredients" and list them on the pesticide label. On December 23, 2009, the USEPA announced its intent to initiate rulemaking to this effect, but later decided not to pursue finalization of the rulemaking. Until the USEPA issues a rule on "inert ingredients," the BLM will continue to follow the four-step risk assessment process identified by the National Academy of Science (1983) when conducting HHRAs (hazard identification, dose-response assessment, exposure assessment, and risk characterization). This process is described in more detail in the HHRA.

Alternatives, Description of the Alternatives

35-25
Alaska Community Action on Toxics

Comment: We firmly oppose the use of these and other herbicides because of the hazards posed to ecological and human health; and given that the BLM has failed to properly conduct alternatives assessment.

Response: The BLM evaluated both ecological and human health hazards in the HHRA and ERAs as well as conducted an analysis of subsistence impacts pursuant to Section 810 of the ANILCA (see Appendix C). The BLM provided additional analysis in the chapter entitled Native American and Alaska Native Resource Uses.

The BLM disagrees that the alternatives assessment was not properly conducted. Under the NEPA, federal agencies are required to consider a "reasonable range of alternatives." The PEIS is concerned only with the BLM's use of the three herbicides aminopyralid, fluroxypyr, and rimsulfuron, and the alternatives considered were developed accordingly. The four alternatives considered in the PEIS are based on the alternatives that were developed for the 2007 PEIS, which included a no aerial spraying alternative, a no use of ALS-inhibiting active ingredients alternative, and a "no action" alternative. Alternatives entailing use of non-chemical management options are not applicable to the current PEIS. The BLM already uses herbicides as well as non-chemical methods to manage vegetation on public lands. Regardless of the decision made on whether to utilize the new herbicides, the BLM would continue to utilize the 18 herbicides that have already been approved for use.

Alternatives, Alternative C – No Aerial Application of New Herbicides

14-05
Oregon Wild

Comment: We are opposed to aerial applications because it indicates (and essentially rewards) a large-scale failure of prevention efforts, and because aerial application is non-discriminate. Too many non-target resources (including ecological[ly] important native plants) will be impacted.

Response: Alternative C of the PEIS would prohibit aerial spraying of aminopyralid, fluroxypyr, and rimsulfuron. However, aerial spraying of herbicides currently approved for aerial applications could continue to occur, regardless of which alternative is ultimately selected.

Decisions to treat large areas aerially are evaluated at a site-specific level and are based on numerous factors (e.g., inaccessibility, treatment size, etc.). To ensure that aerial applications are as precise as possible, the BLM uses Global Positioning System

(GPS) mapping tools to assist aerial applicators. The 2007 PEIS also included SOPs for aerial spraying, which have been carried forward into the current PEIS. They include measures such as avoiding aerial spraying during periods of adverse weather conditions, and making helicopter applications at the appropriate speed and height above the ground. At the local level, the BLM would consider the potential for adverse effects to non-target resources when developing treatment projects.

34-03
Coast Range Association

Comment: Additionally, the [Draft PEIS] indicates that aerial spraying may be employed in the application of the chemical[s] in question. We oppose any aerial spraying because studies have shown unacceptable drift occurs using the Best Management Practices.

Response: An alternative that would prohibit aerial spraying of the three new active ingredients is being considered in the PEIS (Alternative C). However, aerial spraying of currently approved herbicides would continue to occur regardless of which alternative is ultimately selected.

To ensure that aerial applications are as precise as possible, the BLM uses GPS mapping tools to assist aerial applicators and avoid off-site drift. The 2007 PEIS also included SOPs for aerial spraying, which have been carried forward into the current PEIS. They include measures such as avoiding aerial spraying during periods of adverse weather conditions, and making helicopter applications at the appropriate speed and height above the ground. At the local level, the BLM would take the potential for drift and adverse effects to non-target resources into account when developing treatment projects. Chapter 4 of the PEIS identifies buffers zones to minimize impacts to non-target vegetation as a result of herbicide drift during aerial applications. More specific buffers would be developed at the local level based on site conditions and other factors.

Alternatives, Alternatives Considered but not Further Analyzed

26-09
Rehfeldt, Melissa
36-09
Schumacher, Michelle

Comment: Unfortunately, a 'no use of herbicides' alternative is not being considered as an option in the current process. Unfortunately, this means that the BLM is missing out on adopting land management strategies that lead to more diverse and productive ecosystems that are less prone to invasion.

Response: A 'no use of herbicides' alternative is not being considered in the PEIS because it does not meet the stated project purpose, which is to "improve the effectiveness of the BLM's vegetation management program by allowing herbicide treatments with aminopyralid, fluroxypyr, and rimsulfuron." A no use of herbicides alternative was included in the 2007 PEIS. In the ROD for the 2007 PEIS, the BLM made the decision to allow herbicide treatments with 18 active ingredients. Regardless of the decision made in the ROD for the current PEIS, herbicides would still be used by the BLM to treat invasive plants on public lands. The current action only concerns the active ingredients aminopyralid, fluroxypyr, and rimsulfuron.

Alternatives, Herbicide Treatments Standard Operating Procedures and Guidelines

28-07
Copper Country Alliance

Comment: Land and water in and around the application area should be checked for "collateral damage" to non-targeted organisms.

Response: As discussed in Chapter 1 of the document, the PEIS provides a broad, programmatic level environmental impact analysis to which more specific environmental documents can be tiered. The discussion on tiering in the PEIS, under

Study Area and Scope of Analysis, has been expanded to more clearly describe the various levels of environmental analyses and the tiering process. At the site-specific level, local land managers would be aware of non-target organisms of concern and would design herbicide treatment projects to prevent unintended impacts to these organisms. Suitable treatment buffers would be refined at the local level based on site conditions and other factors.

The BLM has a series of SOPs in place that provide additional guidance for avoiding unintended impacts to non-target organisms. These SOPs can be found throughout Chapter 4 of the PEIS, in the individual resource sections. Additionally, as stated under Assumptions for Analysis, the BLM would consider the larger land-management context when implementing herbicide treatments. These considerations would carry over once treatments are completed, as the BLM would consider the site conditions following the herbicide application and would implement post-treatment follow up, including seeding, monitoring, and retreatment, as needed to achieve land management objectives. Post-treatment follow up would include an assessment of the treatment site and nearby areas.

39-09
U.S. Environmental Protection Agency

Comment: Additionally, [US]EPA recommends that BLM commit to using [US]EPA certified Drift Reduction Technology as it becomes available.

Response: The BLM appreciates the recommendation and looks forward to seeing the program in action when it is implemented. The USEPA's web page discussing drift reduction technology states that drift-reduction ratings and information about the use of drift reduction technology will appear on pesticide labels. The BLM will continue to follow the instructions on herbicide labels for all herbicide applications.

39-07
U.S. Environmental Protection Agency

Comment: Many invasive plants on public lands are associated with roads, trails, paths, and other areas where the soil has been disturbed and/or compacted resulting in enhanced runoff and unanticipated significant impacts. Therefore the final PEIS should highlight a process to assess those areas when specific actions will be taken.

Response: The BLM agrees that invasive plants are often associated with areas of disturbance. Roads, trails, paths, and others areas serve as pathways for introducing and spreading weeds and other invasive plants.

As discussed in Chapter 1 of the document, the PEIS provides a broad, programmatic level environmental impact analysis to which more specific environmental documents can be tiered. The concerns raised in the comment would be addressed at the local level during the planning phase and subsequent environmental analyses for site-specific vegetation treatments. Local land managers would consider site conditions, including the potential for surface runoff, when developing herbicide treatments. Additionally, local land managers would follow all applicable SOPs for minimizing impacts to water resources, which are listed in Chapter 4 of the PEIS under Water Resources and Quality, Standard Operating Procedures. Additional measures to protect water resources would be identified at the site-specific environmental analysis level, as required by the NEPA.

Alternatives, Coordination and Education

28-06
Copper Country Alliance

Comment: Signs should go up around the herbicide application area (including the drift zone) prior to, during, and after application. Signs should remain in the area for at least a year. This is especially true in Alaska, where herbicides break down more slowly than in warmer states.

Response: Standard operating procedures pertaining to posting treated areas are listed in Chapter 4 of the PEIS, under Human Health and Safety, Standard Operating Procedures. The BLM would post treated areas with appropriate signs at common public access areas, as well as provide public notification in newspapers or other media where the potential exists for public exposure. The BLM would consult the restricted entry intervals on the herbicide label to determine the appropriate length of time that signs marking treated areas should remain posted. The BLM would also notify local emergency personnel of proposed treatments. Any additional site-specific issues would be addressed during the local level analysis.

14-04
Oregon Wild

Comment: BLM should provide reasonable and timely public notification before applying herbicides.

Response: Standard operating procedures pertaining to public notification prior to herbicide treatments are listed in Chapter 4 of the PEIS, under Human Health and Safety, Standard Operating Procedures. The BLM would provide public notification in newspapers or other media where the potential exists for public exposure. The BLM would consult the restricted entry intervals on the herbicide label to determine the appropriate length of time that signs marking treated areas should remain posted. The BLM would also notify local emergency personnel of proposed treatments.

Alternatives, Mitigation

39-12
U.S. Environmental Protection Agency

Comment: Aminopyralid has been known to be persistent in composted materials. Therefore, [US]EPA recommends the final PEIS commit to ensure that following the application of aminopyralid to an area, BLM should conduct site assessment and ensure that plant materials are not removed and introduced into any composting activities.

Response: As stated in Chapter 4 of the PEIS, under Social and Economic Values, Summary of Herbicide Impacts, the BLM would follow all label instructions, and would not export manure, plant residues, or other materials that may be treated with aminopyralid for use as soil amendments. The concerns raised in the comment would be addressed further at the local level during project planning and site-specific NEPA analysis. The BLM would not design vegetation treatment projects that entail removal of plant materials from a treatment site, and could include specific mitigation measures to address these concerns, if warranted.

Affected Environment, Air Quality and Climate

39-20
U.S. Environmental Protection Agency

Comment: While the Chapter 3 Greenhouse Gas Emissions and Climate Change section notes that "regulatory agencies recognize that GHG emissions from a particular project cannot be tied specifically to climate change impacts," we recommend agencies follow the approach recommended in the CEQ guidance of using the projected GHG emissions as a proxy for assessing a proposed action's potential climate change impacts. This allows an agency to present the environmental impacts in clear terms with sufficient information to make a reasoned choice between the no-action an alternatives and mitigation.

Response: The text of the PEIS has been changed to reflect the revised CEQ guidance referenced in the comment (*Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews*; CEQ 2014). The statement that GHG emissions cannot be tied specifically to climate change

impacts has been modified to state that projected GHG emissions can be used as a proxy for assessing a proposed action's potential climate change impacts.

Environmental Consequences, General

35-01
Alaska Community Action on Toxics

Comment: Herbicide applications are designed to destroy the growth of plant life and are toxic to the environment because they adversely affect non-target plants, animals, and people. The use of herbicides, including aminopyralid, fluroxypyr, and rimsulfuron, will have detrimental effects to non-target plants, wildlife and people. Herbicide chemical treatments will have a detrimental effect on the lands, waters, and air as well as fish and wildlife resources that people rely on for hunting, fishing, and gathering for their daily food.

Response: The potential for aminopyralid, fluroxypyr, and rimsulfuron to adversely affect non-target plants, animals, and people is discussed in Chapter 4 of the PEIS (Environmental Consequences). Appendix C of the PEIS is an ANILCA Section 810 Analysis of Subsistence Impacts, which provides an evaluation of the proposed project on subsistence resource in Alaska. The BLM does not agree that use of these three active ingredients would have detrimental effects to non-target plants, wildlife, or people, or on the lands, waters, air, or fish and wildlife resources that people rely on for hunting, fishing, and gathering their daily food. As disclosed in the PEIS, aminopyralid, fluroxypyr, and rimsulfuron are non-toxic or of low toxicity to humans, wildlife, and the environment. The BLM would design its herbicide treatment projects to avoid impacts to non-target vegetation and other resources, and would develop appropriate buffers for protecting these resources. The intent of vegetation treatments would be to reduce the risk of wildfire and the spread of weeds and improve ecosystem health, but these actions would not be done at the expense of resources that people rely on for hunting, fishing, and gathering. During local-level NEPA analyses for site-specific projects, the BLM would consult with Native American tribes, Alaska Native groups, and Alaska Native Corporations and would take into account and address their concerns.

35-17
Alaska Community Action on Toxics

Comment: Herbicide applications are likely to result in higher economic and ecological costs over the long term, as plants develop resistance to herbicide applications. Despite earlier claims that glyphosate resistance was unlikely, at least 19 weed species have developed glyphosate-resistant strains in agricultural areas worldwide. Field studies in Washington state showed that star thistle repeatedly treated with picloram developed resistance to not only to the herbicide actually used, picloram, but to other herbicides (including clopyralid) with the same mode of action. The use of herbicides will perpetuate resistance of the vegetation to treatment and will not be effective in vegetation management in the future. Herbicide-resistant weeds may also spread into areas beyond the application sites, thereby increasing the problem and cost of weed control.

Response: The development of herbicide resistance is an issue of great interest in production agriculture. Several plant species have been documented as being resistance to particular herbicide active ingredients. Several factors contribute to the development of an herbicide-resistant population of a plant species, including the characteristics of the active ingredient, the genetic makeup of the plant species, and the timing and frequency of the herbicide application.

The BLM is aware that herbicide resistance has the potential to develop within populations of certain plant species that occur on BLM-administered lands. The BLM has taken steps to prevent and address herbicide resistance. As part of the required

Integrated Pest Management and Pesticide Applicator Certification Training, the BLM discusses the benefits of incorporating mechanical, manual, and biological control into the overall herbicide resistance management strategy of a particular project. The BLM provides training on the different mechanisms of activity of approved herbicide active ingredients, and on the benefits of rotational use of herbicides with different mechanisms of activity. In addition to this training, the BLM continues to monitor herbicide application sites for herbicide resistant plant populations, and takes steps to address herbicide resistance, as needed.

As stated in Chapter 1 of the PEIS, under Purpose and Need for the Proposed Action, one reason that the BLM wishes to utilize the new active ingredients is to address herbicide resistance by certain species to active ingredients currently approved for use.

Environmental Consequences, Herbicide Effects Analysis

12-02
Eller, Barb

Comment: There is no data on the long-term human and ecology effects of mixtures of multiple herbicides.

Response: Quantifying the potential long-term impacts associated with the use of mixtures of herbicide active is not practical, given the different variables associated the herbicide tank mixtures, differences in the concentration of the individual active ingredients, environmental characteristics of the site of application, variability in the post application environmental conditions, and many other individual factors that influence the behavior, over time, of herbicide tank mixes.

The registration of herbicides is the responsibility of the USEPA. The BLM, like all government agencies, relies on processes established by the USEPA, including stringent and comprehensive standards for conducting human health and ecological risk assessments. The USEPA does not currently require a quantitative evaluation of potential tank mixes when conducting ERAs. However, the risk assessments did address the uncertainties associated with herbicide mixtures, and the BLM would consider the potential for additive or synergistic effects when selecting and using herbicide mixtures.

14-02
Oregon Wild

Comment: BLM should disclose all ingredients (including so-called inert ingredients) included in the herbicides it intends to use and BLM should disclose the health and environmental effects of all those ingredients singly and in combination.

Response: A discussion of "inert" or "other" ingredients is provided in the human health and ecological risk assessments. Unlike the active ingredient, federal law does not require that the "other" ingredients be identified by name or percentage on the label, as it is considered confidential business information; they are only listed as a total percentage of the formulation.

The BLM requires that inert/other ingredients found in herbicide formulations be listed in the InertFinder database, which is maintained by the USEPA and includes all chemicals approved for use as inert ingredients in pesticide products.

26-05
Rehfeldt, Melissa
36-05
Schumacher, Michelle

Comment: [Although] the BLM is requesting the addition of three new herbicide active ingredients, the herbicide formulations they purchase and use could contain a number of active ingredients (such as PastureGard that contains fluroxypyr and triclopyr). These herbicide formulations are not subject to toxicity testing, and their potential synergistic effects are unknown.

Response: The BLM is in agreement that herbicide mixtures are a source of uncertainty in the risk assessment process, and is aware that the USEPA is discussing possible methods of addressing risks to plants and animals from the use of mixtures as part of the pesticide active ingredient registration process. Presently, however, there are no guidelines/directives for evaluating such potential risks.

Section 7.3.3.2 of the ERAs prepared for aminopyralid, fluroxypyr, and aminopyralid discusses mixtures and acknowledges that a quantitative evaluation of the potential risks associated with mixtures is outside the scope of the risk assessments. To address each possible combination of a tank mix involving two or more active ingredients under several different application rates and scenarios would not be practical. It should be noted that only herbicide active ingredients for which the BLM has completed risk assessments would be used in mixtures with the three new active ingredients. Therefore, although herbicide mixtures have not had individual risk assessments completed, their individual components have. BLM land managers would continue to thoroughly review labels for tank-mixed products, and would select mixtures with the least potential for negative effects.

26-06
Rehfeldt, Melissa
36-06
Schumacher, Michelle

Comment: In addition, most herbicide formulations contain undisclosed, untested, and unregulated surfactants and adjuvants that are not subject to regulatory scrutiny, making it impossible to know the full effects of applying these chemicals on public lands.

Response: The BLM is in agreement that adjuvants represent a source of uncertainty in the risk assessment process. Adjuvant is a broad term that includes surfactants, selected oils, anti-foaming agents, buffering compounds, drift control agents, compatibility agents, stickers, and spreaders. Adjuvants are not under the same registration guidelines as pesticides, and the USEPA does not register or approve the labeling of spray adjuvants. Individual herbicide labels identify which types of adjuvants are approved for use with the particular herbicide.

Adjuvants are discussed in Section 7.3.3.1 of the ERAs for aminopyralid, fluroxypyr, and rimsulfuron. The risk assessments identify what types of adjuvants have been identified for use in formulations of the proposed active ingredients, and provide a general analysis of their likely toxicity. Additionally, modeling was used to estimate the potential portion of an adjuvant that might reach an adjacent water body via surface runoff.

28-08
Copper Country Alliance

Comment: In many instances, “inert ingredients” are not inert at all, but have significant impacts on organisms.

Response: The BLM acknowledges that the application of a pesticide may include the application of one or more active ingredients, along with the associated “inert” or “other” ingredients. These other ingredients are included in the pesticide formulation for the purpose of, among other things, improving the active ingredient’s ability to move through the plant surface, improving the stability of the formulation, and reducing the degradation of the active ingredient.

A discussion of “inert” or “other” ingredients is provided in the human health and ecological risk assessments. Unlike the active ingredient, federal law does not require that the inert/other ingredients be identified by name or percentage on the label, as it is considered confidential business information; they are only listed as a total percentage of the formulation.

The BLM requires that inert/other ingredients found in herbicide formulations be listed in the InertFinder database, which is maintained by the USEPA and includes all chemicals approved for use as inert ingredients in pesticide products.

34-04
Coast Range Association

Comment: We ask whether the BLM has assessed the non-monotonic effects of the chemicals aminopyralid, fluroxypyr, and rimsulfuron. Are these chemicals hormone mimicking compounds?

Response: Non-monotonic effects have not been evaluated, as the required testing for pesticide registration does not include non-monotonic effects. That said, many of the studies used in development of the toxicity endpoints selected by the USEPA (described in Section 2.2 of the HHRA) do include testing both low and high doses.

As discussed in Section 2.2.1.10 of the HHRA, the USEPA is in the process of screening chemicals under the Endocrine Disruptor Screening Program. Aminopyralid, fluroxypyr, and rimsulfuron were not selected for screening in the first batch of chemicals, suggesting low potential for endocrine disruption. The BLM conducts periodic reviews of the active ingredients utilized in herbicide treatment programs, and risk assessments are updated periodically. If any new information about the potential for these active ingredients to cause endocrine disrupting effects becomes available in the future, the BLM will review the information and evaluate whether changes in the way the herbicides are used on public lands is warranted.

35-06
Alaska Community Action on Toxics

Comment: There is very little information or studies available in the open scientific and peer-reviewed literature on the ecological and human health consequences of the use of aminopyralid because it is a relatively new pesticide. What little information exists is based almost exclusively on studies submitted to the [USEPA] by the chemical corporation Dow AgroSciences in support of the registration of aminopyralid.

Response: The registration of herbicides is the responsibility of the USEPA. The BLM, like all government agencies, relies on pesticide toxicological studies required and reviewed by the USEPA. The USEPA has stringent and comprehensive standards for these studies. See http://www2.epa.gov/pesticide-registration/data-requirements. USEPA scientists review and approve (or reject) the study results. Based on this process, the USEPA has made the determination that the studies submitted in support of the registration of aminopyralid were adequate.

In order to determine the potential toxicological risks associated with aminopyralid, the BLM conducted human health and ecological risk assessments in support of the PEIS. These risk assessments incorporated toxicity data from numerous studies involving the active ingredient. In the ERA, these studies are listed in Appendix A.1. In the HHRA, much of the toxicity information was obtained from risk assessments prepared by the USEPA Office of Pesticide Programs Health Effects Division, as discussed in Section 2.2 of the document.

35-15
Alaska Community Action on Toxics

Comment: For the other two herbicides, fluroxypyr and rimsulfuron, we find that there is also insufficient information in the peer-reviewed literature with which to make reasoned assessments concerning the ecological and human health implications of their use. Therefore, we are opposed to their use as a precautionary measure.

Response: The required testing and studies on fluroxypyr and rimsulfuron have been conducted in accordance with USEPA guidelines and with pesticide registration requirements.

Section 2.2.4 of the HHRA outlines the studies for fluroxypyr used in support of registration and development of dose-response values. Available studies included oral and dermal subchronic toxicity, developmental toxicity, reproductive toxicity, chronic toxicity, carcinogenesis, and mutagenicity. Test animals included mice, rats, rabbits, and dogs.

Section 2.2.5 of the HHRA outlines the studies for rimsulfuron used in support of registration and development of dose-response values. Available studies included oral subchronic toxicity, developmental toxicity, reproductive toxicity, chronic toxicity, carcinogenesis, and mutagenicity. Test animals included mice, rats, and dogs.

The dose-response values used in the HHRA are those developed by the USEPA in support of pesticide registration, as presented in Table 3-1 of the HHRA. The results of the risk assessment show that fluroxypyr and rimsulfuron do not pose unacceptable risks under any of the routine use occupational or public exposure scenarios evaluated; however, rimsulfuron poses potentially unacceptable risks to occupational receptors under an accidental spill to skin scenario. These potential risks would be mitigated through the use of personal protective equipment and by following all label requirements.

Available ecotoxicological literature reviewed for fluroxypyr included studies conducted as part of the USEPA pesticide registration process, the comprehensive risk assessment published by the Forest Service in June 2009 (SERA 2009), and more recent studies (after 2009) available from the USEPA's Pesticide Ecotoxicity Database, as described in Section 3.1 of the fluroxypyr ERA. Similarly, for rimsulfuron, available ecotoxicological literature was reviewed from the USEPA pesticides ecotoxicology database and the online ECOTOX database (http://cfpub.epa.gov/ecotox/).

Ecotoxicological endpoints for the studies evaluated included growth, reproduction, and mortality, as well as sublethal endpoints such as immobilization. Test species included small mammals (e.g., rats, mice, and rabbits), birds (e.g., ducks and quail), honeybees, vegetable crop species, coldwater and warmwater fish species, and aquatic plants and invertebrates. Toxicity reference values were calculated based on exposure concentrations for terrestrial plants and aquatic receptors and on acute dose-based endpoints when possible, or on concentration-based endpoints using USEPA risk assessment guidelines (Sample et al. 1996) for birds and wildlife. Toxicity reference values were also based on the most sensitive available endpoint, which is a conservative approach due to the wide range of data and effects available for different species.

The uncertainties related to the available toxicity data are addressed in Section 7.1 of both the rimsulfuron and fluroxypyr ERAs. It is noted in Section 7.5 that the combination of many conservative assumptions used in the ERAs (e.g., the use of safety factors, chronic exposures, laboratory toxicity tests, and continuous exposure to predicted ecological exposures) is likely to over-predict, rather than under-predict, risks for ecological receptors overall.

35-20
Alaska Community Action on Toxics

Comment: Pesticides have interactive effects and ultra low-level effects that are below [US]EPA allowable levels. These effects include adverse neurological, endocrine, immune, reproductive and developmental health outcomes.

Response: As outlined in Section 2.2 of the HHRA, the studies used to develop the dose-response values included a range of doses in a variety of species, and cover the

health outcomes noted in the comment. Current pesticide registration requirements do not include studies of interactive effects.

35-21
Alaska Community Action on Toxics

Comment: [US]EPA assessments of biological risk can be off by a factor of 10,000 at ultra low doses. Scientists call for a new type of risk assessment in the open literature because of the inadequacies of the current [US]EPA pesticide registration systems.

Response: Risk assessment methodologies are always evolving. The risk assessments conducted in support of the PEIS followed existing regulations and guidelines. It is beyond the scope of the PEIS to evaluate methods presented in the open literature that have not been endorsed by the USEPA.

35-22
Alaska Community Action on Toxics

Comment: Pesticides have broad biological effects that are unintended and often unpredictable because of physiochemical properties engineered into their molecules.

Response: The comment has been noted. The ERAs follow the most recent USEPA-approved methodology for determining the potential toxicological effects of aminopyralid, fluroxypyr, and rimsulfuron.

35-23
Alaska Community Action on Toxics

Comment: Pesticides of different classes can have similar impacts on endocrine disruption and sexual development. Chemicals affect development at levels in the tenth of a part per billion range.

Response: As discussed in Section 2.2.1.10 of the HHRA, the USEPA is in the process of screening chemicals under the Endocrine Disruptor Screening Program. Aminopyralid, fluroxypyr, and rimsulfuron were not selected for screening in the first batch of chemicals, suggesting low potential for endocrine disruption. The BLM conducts periodic reviews of the active ingredients utilized in herbicide treatment programs. If any new information about the potential for these active ingredients to cause endocrine disrupting effects becomes available in the future, the BLM will review the information and evaluate whether changes in the way the herbicides are used on public lands is warranted.

35-24
Alaska Community Action on Toxics

Comment: In the preeminent peer-reviewed environmental health journal published by the National Institute for Environmental Health Sciences, *Environmental Health Perspectives*, the authors warn: "Inert ingredients may be biologically or chemically active and are labeled inert only because of their function in the formulated product...Inert ingredients can increase the ability of pesticide formulations to affect significant toxicological endpoints, including developmental neurotoxicity, genotoxicity, and disruption of hormone function. They can also increase exposure by increasing dermal absorption, decreasing the efficacy of protective clothing, and increasing environmental mobility and persistence. Inert ingredients can increase the phytotoxicity of pesticide formulations, as well as toxicity to fish, amphibians, and microorganisms." In the case of this permit application, the active ingredients cannot be used without an adjuvant and/or surfactant. The scientific literature supports the fact that the use of surfactants/adjuvants increases the bioavailability, toxicity, persistence, and bioaccumulation of the active ingredient.

Response: In reviewing the article cited in the comment, the conclusions of the authors appear to be centered on expanding the registration process utilized by the USEPA. The BLM, like all pesticide users, relies on the process established by the USEPA to address human health and environmental risks associated with the use of pesticides. For pesticide formulations the USEPA states that all ingredients, "including those in an inert mixture, must be approved for use by the USEPA." As the pesticide

registration policy evolves and changes, so will the evaluation associated with the use of pesticides on public lands.

The USEPA's Pesticide Registration Manual states that "…the registering division will treat the adjuvant as if it were an 'other ingredient' in making the registration decision, and will assure that any necessary tolerances or exemptions from the requirement of a tolerance are established. It would also be within the Agency's authority to treat any tank-mixed substance as part of the pesticide (and thus needing a Federal Food, Drug, and Cosmetic Act tolerance) in that it meets the Federal Insecticide, Fungicide, and Rodenticide Act definition of pesticide—i.e., a 'mixture' of substances intended to kill a pest."

For adjuvants, the ERAs for aminopyralid, fluroxypyr, and rimsulfuron include sections that discuss the potential toxicological impacts associated with the addition of an adjuvant (Section 7.3.3.1). The BLM also requires that the ingredients included in the adjuvant are found within the same USEPA database that is used for inert/other ingredients (the InertFinder database).

Environmental Consequences, Air Quality

39-19
U.S. Environmental Protection Agency

Comment: We appreciate the discussion of climate change and the inclusion of GHG emissions associated with the proposed action and alternatives. While the Draft PEIS acknowledges the 2010 [CEQ] draft guidance on analyzing climate change impacts in NEPA, we believe the most recent CEQ *Revised Draft Guidance for Federal Agencies' Consideration of GHG Emissions and Climate Change* (2014) provides a reasonable approach for conducting analysis of GHGs and climate change impacts. We note that the Draft PEIS compares the GHG emissions to the 17 states and national emissions; we believe this approach does not provide meaningful information for a programmatic-level analysis. We recommend that the NEPA analysis provide a frame of reference, such as an applicable Federal, state, tribal, or local goal for GHG emission reductions, and discuss whether the emission levels are consistent with such goals.

Response: The text of the PEIS has been changed to reflect the recent revised CEQ guidance cited in the comment. The effects analysis has been revised to consider the net emissions that are likely to occur with and without the proposed action. A discussion of the contribution of wildfires to GHG emissions has been added under the Greenhouse Gas Analysis subsection of the Chapter 4 Air Quality and Climate discussion. Wildfires are a biogenic source of GHG emissions that can be exacerbated by certain invasive plants (e.g., cheatgrass and other annual grasses). In the case of the proposed herbicide treatments, the reduction in wildfire risk from successful vegetation management would be expected to have long-term beneficial effects over many years. Use of the three new herbicides would allow the BLM additional options for managing invasive species that contribute to wildfire, such as cheatgrass. Reducing wildfires is identified in the President's Climate Action Plan (Executive Office of the President 2013) as a specific effort to protect natural resources.

39-21
U.S. Environmental Protection Agency

Comment: Lastly, the Draft PEIS states that no mitigation measures would be necessary for potential air quality and climate change impacts. We recommend the final PEIS identify and commit to implementation of reasonable mitigation measures to include at the project level to specifically reduce GHG emissions such as using energy efficient equipment and limiting idling when possible.

Response: The BLM agrees that measures to reduce GHG emissions should be considered at the project level. The Standard Operating Procedures Section of Chapter

4, Air Quality and Climate, has been changed to include a discussion of BMPs to reduce GHG emissions, which would be considered at the local level.

Environmental Consequences, Soil Resources

35-14
Alaska Community Action on Toxics

Comment: It is likely that aminopyralid is more persistent in our colder environment [in Alaska] and may cause more damage to northern species and ecosystems.

Response: The residual activity of an herbicide is influenced by several factors, including those associated with the herbicide, the environmental conditions of the proposed site of application, and the physical and biological make-up of the soil. Temperature, soil moisture, aeration, soil pH, and organic matter content all influence the microbial population in the soil. During the site-specific analysis of a proposed application of aminopyralid, the active ingredient's residual potential would be considered and addressed. The BLM would consider actions to reduce the residual life of aminopyralid, as necessary, such as the following: 1) applying the lowest amount of the herbicide consistent with achieving the desired result; 2) considering application of a tank mixture to reduce the amount of aminopyralid applied while still achieving the desired result; 3) making applications when the air temperature is at its warmest, when the target plants are most susceptible; and 4) making spot treatment applications rather than broadcast applications.

Environmental Consequences, Water Resources and Quality

12-01
Eller, Barb

Comment: Herbicides and their degradates are now commonly found in ground and surface waters.

Response: The potential for aminopyralid, fluroxypyr, and rimsulfuron and their degradates to be transported to surface water, and to infiltrate into and persist in groundwater, is discussed in Chapter 4 of the PEIS, under Water Resources and Quality. Studies by the USGS have shown that herbicides or their degradation products do not commonly occur in shallow groundwater except in areas of agricultural land use. The movement of any herbicide in groundwater is affected by many factors such as thickness of the unsaturated zone, the amount of clay in the soil matrix, the depth to the zone of saturation and the hydraulic gradient of the local groundwater flow system. Herbicides or their degradation products rarely occur in bedrock aquifers. These factors will be evaluated during the site-specific project level environmental analysis as required by the NEPA.

26-02
Rehfeldt, Melissa
36-02
Schumacher, Michelle

Comment: Aminopyralid also has a high potential for surface water runoff because of its chemical structure.

Response: The BLM agrees with this statement. A discussion of aminopyralid's high potential for surface water runoff can be found in Chapter 4, under Water Resources and Quality. Aminopyralid is moderately persistent and highly mobile, and does not adsorb well to soil particles. For these reasons, it has a high potential for surface water runoff. However, given its low toxicity, surface water runoff of aminopyralid is not a concern. Its major metabolic products following photolysis in water are oxamic acid and malonamic acid, neither of which is of concern from a toxicity standpoint. Based on its low toxicity, aminopyralid is likely to receive an aquatic registration in the near future that would allow incidental overspray of aquatic habitats. The ERA for aminopyralid determined that this active ingredient would not pose a risk to fish or invertebrates in ponds or streams as a result of any of the modeled exposure scenarios, including a spill of a large quantity of the active ingredient directly into a water body.

39-02
U.S. Environmental Protection Agency

Comment: As a result of a U.S. Sixth Circuit Court of Appeals decision in *National Cotton Council et al. v. EPA*, as of October 31, 2011, point source discharges of biological pesticides that leave a residue, into waters of the U.S. are required to comply with [NPDES] requirements. Therefore, NPDES permits are required for pesticide applications directly to, over, or near water and may be required for certain instances on public lands. The final PEIS should include a discussion of the new permitting requirements and outline a framework for obtaining a NPDES permit for project-specific treatments to ensure that site-specific impacts and mitigation are considered.

Response: Although none of the proposed active ingredients have an aquatic label, there could be applications over or near water, particularly for aminopyralid. BLM field personnel would address NPDES requirements at the site-specific level. The PEIS has been modified to include a brief discussion of NPDES permit requirements in Chapter 4, under Water Resources and Quality.

39-04
U.S. Environmental Protection Agency

Comment: The final PEIS should clarify plans for treatment of invasive plants within buffer zones and anticipate measures to take to protect water quality within nearby waterways; including specific mitigation measures for wetlands and riparian areas to offset potential impacts associated with the three proposed herbicides.

Response: The concerns raised in the comment would be addressed at the site-specific level for proposed projects that require treatment of invasive plants within the BLM's standard buffer zones for wetland and riparian areas (100 feet for aerial spraying, 25 feet for ground applications, and 10 feet for hand applications). As discussed in Chapter 1 of the document, the PEIS provides a broad, programmatic level environmental impact analysis to which more specific environmental documents can be tiered. The discussion on tiering in the PEIS, under Study Area and Scope of Analysis, has been expanded to more clearly describe the various levels of environmental analyses and the tiering process. During the site-specific analysis, the BLM would consider potential effects to water quality from proposed herbicide treatments with aminopyralid, fluroxypyr, and rimsulfuron, and determine whether specific mitigation measures are warranted.

39-05
U.S. Environmental Protection Agency

Comment: In areas where there are soils with high infiltration rates, herbicides that are highly soluble in water have the potential to leach into soils and contaminate surface and groundwater, potentially causing exceedances of water quality and/or drinking water standards. In addition, no water quality standards exist for herbicides such as the proposed aminopyralid, which has the highest mobility, with some modeling data suggesting that leaching can occur to 60 inches or greater in all soil types in average rainfall/cool climates and a higher likelihood of reaching groundwater than all other herbicides. Therefore, [US]EPA recommends that future site-specific NEPA analyses include risk assessment data for adjuvants proposed for use with the three proposed herbicides on BLM land.

Response: A discussion of the physical properties of aminopyralid, fluroxypyr, and rimsulfuron and their potential for off-site movement is provided in Chapter 4 of the PEIS, with this information summarized in Table 4-5. The potential for these three active ingredients to leach into soils and contaminate surface water and groundwater is discussed under Water Resources and Quality, Impacts by herbicide. The comment does not include a citation for the referenced modeling data that indicate aminopyralid's higher likelihood of reaching groundwater than all other herbicides, so the BLM is unable to address this portion of the comment. During local level NEPA analysis, the BLM will consider herbicide characteristics for leaching to groundwater and the potential for groundwater contamination on a site-specific basis. It is not clear

how the final sentence about the ecological risks of adjuvants pertains to the rest of the comment, but the BLM acknowledges the importance of considering the total application mixture, including adjuvants listed on the label, during the site-specific analysis.

39-06
U.S. Environmental Protection Agency

Comment: Additionally, BLM should consider excluding application of herbicides near waterbodies with no water quality data and designated source water protection areas.

Response: As discussed in Chapter 1 of the document, the PEIS provides a broad, programmatic level environmental impact analysis to which more specific environmental documents can be tiered. The concerns raised in the comment would be addressed at the local level during the NEPA process for site-specific vegetation treatments. Local BLM land managers would take into account water quality concerns and special designations when designing site-specific treatment projects. As stated in Chapter 1 of the PEIS, under State and County Level Coordination, "At the agency or state level, vulnerability assessments are done for treatment programs to ensure that they do not result in unacceptable surface water or groundwater contamination."

39-08
U.S. Environmental Protection Agency

Comment: Extensive chemical treatment activities have the potential to increase erosion and sediment delivery to drainages from the creation of barren ground from invasive plant removal. Applied herbicides could also be discharged to aquatic habitats via surface runoff, wind drift, leaching, or accidental spills. Cumulatively, water quality could also be impacted as a result of effects of other projects on BLM lands, including but not limited to, road and trail construction and maintenance activities, livestock grazing along drainages, and recreational activities adjacent to drainages. Treatments near 303(d) listed waters [impaired/threatened stream/river segments and lakes that are regulated by the USEPA under the Clean Water Act] or road ditches that drain into waterways could further degrade water quality due primarily to sediment, herbicide, and temperature loadings (vegetation removal). The final PEIS, therefore, should identify added precautions that will be used when applying the herbicides near streams or road ditches that drain into streams to minimize or avoid drift impacts and sublethal effects to aquatic life.

Response: The BLM concurs that the types of impacts to aquatic habitats identified in the comment must be recognized and considered when developing site-specific herbicide treatment projects. However, the programmatic scope of the PEIS does not allow the document to address site-specific impacts associated with individual projects. The types of impacts identified in the comment would be addressed by the BLM at the local level through additional NEPA analyses needed to authorize the project, as well as through the development of appropriate protective measures needed to comply with Federal Insecticide, Fungicide, and Rodenticide Act and Clean Water Act permitting requirements.

Environmental Consequences, Wetland and Riparian Areas

39-03
U.S. Environmental Protection Agency

Comment: [US]EPA is concerned about unintended consequences that may result from application of herbicides such as drift, effects on non-target species, accidental spills, and persistence in soils that may erode into waterways; especially in designated habitat conservation areas. For example, application of the three proposed herbicides near streams within Riparian Habitat Conservation Areas should follow requirements of the Pacific Anadromous Fish/Inland Native Fish (PACFISH/INFISH) management strategies that limit ground-disturbing activities within [Riparian Habitat Conservation Areas]. Additionally, BLM should adhere to prescribed buffers i.e., 300 [feet] on all

fish-bearing streams and 150 [feet] on streams without fish for improved protection of aquatic resources in [Riparian Habitat Conservation Areas] from herbicide application projects.

Response: The BLM would determine appropriate buffers to protect aquatic resources at the site-specific level, taking site conditions, presence of fish, and any applicable land designations or management plans into account. As discussed in Chapter 4 of the PEIS under Wetland and Riparian Areas, Methodology for Assessing Impacts to Wetland and Riparian Areas, minimum buffer widths for herbicides not labeled for aquatic use are 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand applications. Based on the low toxicological risks associated with aminopyralid, fluroxypyr, and rimsulfuron, larger buffers were not identified at the programmatic level to protect fish and other aquatic organisms from herbicide treatments involving these active ingredients. However, the standard buffers would be adjusted as needed at the local level to protect aquatic resources. Additionally, the BLM would consider the potential for ground disturbance to affect water resources during the local level NEPA analysis once the details of a proposed project are known. For actions proposed within Riparian Habitat Conservation Areas, the special designation would be taken into account when designing herbicide treatment projects, and appropriate steps would be taken to protect the exceptional values that these areas provide.

39-18
U.S. Environmental Protection Agency

Comment: Non-target wetland and riparian areas could be exposed to herbicides transported from upland areas via a variety of methods. The primary potential impacts would be loss of non-target native vegetation and contamination of water or soil, particularly as a result of an accidental spill. Therefore, we recommend the final PEIS emphasize the importance of using all herbicides, especially near waters and wetlands, consistent with the limitations and instructions included on herbicide labels. Using herbicides near waters is subject to NPDES permitting, which requires compliance with herbicide labels to avoid impacts to aquatic resources.

Response: The PEIS states in various locations of the document that use of the new herbicides would be consistent with the label instructions. The Assumptions for Analysis section in Chapter 4 of the PEIS lists SOPs that pertain to herbicide use, including following the product label for use and storage, and reviewing, understanding and conforming to the "Environmental Hazards" section on the herbicide label.

Although none of the proposed active ingredients have an aquatic label, there could be applications over or near water, particularly for aminopyralid. BLM field personnel would address NPDES requirements at the site-specific level. The PEIS has been modified to include a brief discussion of NPDES permit requirements in Chapter 4, under Water Resources and Quality.

Environmental Consequences, Vegetation

35-07
Alaska Community Action on Toxics

Comment: Non-target plants, particularly dicots (broadleaf plants) are sensitive to [aminopyralid] and will be adversely affected by applications of aminopyralid. Studies have shown that exposure of non-target plants to aminopyralid causes damage including deformed leaves and stems, as well as reduced fruit production at low concentrations.

Response: The potential effects of aminopyralid on non-target plants are discussed in Chapter 4 of the PEIS, under Vegetation, Impacts of Herbicide Treatments. The document states that "aminopyralid poses a high risk to non-target plants within the

treatment areas," and Table 4-8 presents buffers that were developed to minimize risks to non-target vegetation from off-site drift of aminopyralid during herbicide applications. The mitigation measure at the end of the section would require the BLM to establish herbicide-specific buffer zones between treatment areas and non-target plant species/populations of interest.

35-09
Alaska Community Action on Toxics

Comment: Research also shows that aminopyralid altered native plant communities.

Response: The PEIS discusses aminopyralid's potential to alter native plant communities in Chapter 4 under Vegetation, Impacts of Herbicide Treatments, Impacts of Aminopyralid (page 4-27). The BLM's SOPs include measures to minimize impacts to native plant communities, including conducting pre-treatment surveys and designing treatments that minimize damage to non-target vegetation.

39-14
U.S. Environmental Protection Agency

Comment: Application of herbicides such as aminopyralid [has] the potential to damage a variety of vegetation communities, including macrophytic species (wetland vegetation), grasslands, and forbs, resulting in reduced growth, curling, chlorosis and/or necrosis and plant death. In particular, use of aerial applications may harm non-target forage and cover species more than other methods. It is also possible that the number of acres treated annually may increase in years in which herbicides are applied aerially, which would increase the adverse effects of herbicide application to non-target vegetation in those areas.

Response: The potential effects of aminopyralid, fluroxypyr, and rimsulfuron on non-target vegetation are discussed in Chapter 4 of the PEIS, Environmental Consequences, Vegetation. This section also incorporates by reference the lengthier discussion in the 2007 PEIS. These discussions mention the increased risks to non-target vegetation associated with aerial applications, and provide appropriate buffer distances for both aerial and ground-based application methods to protect non-target plants from adverse effects. The BLM would consider the site characteristics and potential damage to non-target vegetation, including forage and cover species, when designing herbicide treatment projects.

The current PEIS includes an alternative that would not allow aerial spraying of aminopyralid, fluroxypyr, or rimsulfuron (Alternative C). As stated in Chapter 2 of the PEIS, all alternatives assume a maximum of 932,000 acres would be treated annually via ground and aerial methods combined. While it is true that aerial application of herbicides enables a greater acreage of land to be treated annually, there would be no difference in aerial treatment acreages across the alternatives being considered in the PEIS. Aerial application of herbicides was approved by the 2007 PEIS. Therefore, even if the three new herbicides were not allowed to be applied aerially, other herbicides could, potentially with more damaging effects to non-target vegetation than if the new herbicides were used.

Environmental Consequences, Fish and Other Aquatic Organisms

26-03
Rehfeldt, Melissa
36-03
Schumacher, Michelle

Comment: Fluroxypyr is toxic to freshwater fish and aquatic invertebrates.

Response: A discussion of fluroxypyr's toxicity to fish and aquatic invertebrates can be found in Chapter 4, under Fish and Other Aquatic Organisms, and in the Fluroxypyr ERA. The risk assessment determined that there would be a low risk to special status fish and aquatic invertebrates in ponds under an unlikely accidental helicopter spill scenario. The risk assessment predicted no risks to fish or aquatic invertebrates as a result of exposure to fluroxypyr under any of the modeled scenarios.

34-01
Coast Range Association

Comment: The [Draft PEIS] Chapter 4, Environmental Consequences (page 4-14) states that "the proposed herbicide treatments have the potential to affect water resources on or near public lands by altering water flows, surface water and groundwater quantity and quality, and rates of groundwater recharge." Additionally, on Page 4-41 is stated under Fish and Other Aquatic Organisms that "The proposed herbicide treatments have the potential to affect fish and other aquatic organisms, predominantly through indirect effects to aquatic habitats and adjacent riparian and upland habitats." In both cases cited above, the BLM notes positive effects. Yet on page 4-43 the DEIS states "All herbicides pose some risk to non-target terrestrial and aquatic plants. These risks should be considered, as damage to riparian and aquatic plants may affect fish and aquatic invertebrates. Potential effects from vegetation removal in riparian areas include loss of necessary habitat components (i.e., cover and food), increased sedimentation into aquatic habitats, altered nutrient dynamics, and increased water temperature due to a reduction in shade."

Response: The PEIS discusses potential adverse and beneficial effects of treatment with the three new active ingredients. This comment references both types of effects. The potential for adverse effects to water resources, aquatic habitats, fish, and other aquatic resources does not preclude the potential for beneficial effects to these resources if the appropriate SOPs and other protective measures are followed to minimize the risks for adverse effects. As discussed in Chapter 4 of the PEIS under Fish and Other Aquatic Organisms, the BLM has developed numerous SOPs and mitigation measures for herbicide applications in riparian areas and near streams, including buffers between treatment areas and aquatic habitats, and use of the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms. Based on the likely usage of the three new herbicides, wide-scale removal of riparian vegetation would be unlikely to occur. Fluroxypyr and rimsulfuron would typically not be used near water, except to spot treat target species. Aminopyralid would be used in riparian treatments for selective removal of species such as knapweeds, but extensive removal of riparian vegetation would be unlikely. Additionally, many of the BLM's treatment programs developed at the local level would be designed to improve riparian and aquatic systems, and to restore and enhance fish habitat. Herbicide treatments, where appropriate, would be used as one component of these treatment programs.

During local-level project planning and environmental analysis, the BLM would be able to more specifically address the potential beneficial and/or adverse effects of herbicide treatments to fish and other aquatic organisms, based on local site conditions. In many cases, herbicide treatments would be implemented with the goal of improving riparian habitats and would have a long-term beneficial effect. Site-specific mitigation measures to protect aquatic resources from adverse effects would also be developed at the local level, as needed.

34-02
Coast Range Association

Comment: The Coast Range Association has attached as part of our comments a report titled *Conservation of Aquatic and Fishery Resources in the Pacific Northwest: Implications of New Science for the Aquatic Conservation Strategy of the Northwest Forest Plan*. The report has a section that speaks to pesticides and aquatic species....Specifically, we refer the BLM to Page 18 of the report, Chemical Use in Forests. Please accept this section of the report as Coast Range Association comments.

Response: The BLM appreciates the information and has read the section on Chemical Use on Forests in the referenced article. The article is concerned with the potential for harm to listed species of Pacific salmon when commonly used pesticides are applied according to label instructions, and provides five recommendations pertaining to use of

chemicals in forests. Risk assessments completed in support of the PEIS used a conservative analysis to determine the potential risks to sensitive fish, such as Pacific salmon, from exposure to the proposed active ingredients, and were used to develop buffers for protecting sensitive fish species. The recommendations in the article are in line with concerns evaluated by the BLM at the local level when site-specific treatment plans are developed. For example, the BLM has SOPs in place to evaluate the need for chemical treatments and their potential to impact the environment, apply the least amount of herbicide needed to achieve the desired results, minimize the size of application areas, consider surrounding land uses before selecting aerial spraying as a treatment method, use the appropriate application method to minimize the potential for injury to desirable riparian vegetation and aquatic organisms, and treat only that portion of the aquatic system necessary to achieve acceptable vegetation management.

34-05
Coast Range Association

Comment: We also refer the BLM to the following article in *BioScience*: A Perspective on Modern Pesticides, Pelagic Fish Declines, and Unknown Ecological Resilience in Highly Managed Ecosystems (Article in *BioScience* 62(4):428-434, March 2012).

Response: Thank you for the information. The BLM has reviewed the referenced article, which is concerned with the potential cumulative effects of herbicides and other pesticides on aquatic species (primarily fish) and ecological functions, and the difficulties in assessing these effects. The article notes a decline in fish species in the San Francisco estuary and states that pesticides are a possible contributing factor in the decline of imperiled fish species. The article also identifies a need for additional scientific research to look at the ecosystem-level effects of pesticides and the need for ecosystem-based management rather than focusing on ERAs, which, according to the authors, provide limited information.

The cumulative effects analysis of the PEIS acknowledges the past use of herbicides and other pesticides by various entities. The text of the PEIS under Cumulative Effects, Fish and Other Aquatic Organisms, has been revised to cite the referenced article and incorporate a statement about the potential for pesticides to interact with other pollutants and various chemical and non-chemical factors.

The BLM must base its effects analysis on the best available science. Ecological risk assessments were completed in accordance with the USEPA's most recent guidelines. Uncertainties in this process, which include many of the concerns raised in the article, have been identified in the PEIS and individual risk assessments. Should future scientific research result in changes to procedures for assessing potential risks to aquatic species, the BLM would follow the new established procedures for future risk assessments.

Environmental Consequences, Wildlife Resources

35-11
Alaska Community Action on Toxics

Comment: Developmental studies involving gavage administration in adult female rabbits documented signs of incoordination upon exposure. In the rabbit study, developmental toxicity was shown by a decrease in fetal body weights. Effects on the nervous system are not well documented. "It seems reasonable to assume that the most sensitive effects in wildlife mammalian species will be the same as those in experimental mammals (e.g., changes in the gastrointestinal tract, weight loss, and incoordination)."

Response: As indicated in Appendix A.2 of the aminopyralid ERA, the oral gavage-rabbit study (Carney and Tornesi 2004) included in the studies used to derive the small

mammal toxicity reference value reported a no observed adverse effect level (104 mg/kg BW-day) that is higher than the chronic no observed adverse effect level selected as the toxicity reference value (50 mg/kg BW-day). Therefore, the selected toxicity reference value, based on a rat study with dietary exposure to aminopyralid, is more protective than the values reported for the rabbit study. As indicated in the 2007 USDA Forest Service ERA for aminopyralid, the incoordination was rapidly reversible and did not persist past the day of dosing.

Regarding the statement that the most sensitive effects in wildlife mammalian species will be the same in experimental mammals, that is a source of uncertainty noted in Section 7 of the ERA (Table 7-1). Species differ in terms of absorption, metabolism, distribution, and excretion of chemicals. However, it has been shown in many cases that laboratory studies overestimate risk relative to field studies (Fairbrother and Kaputska 1996), and the toxicity reference values selected for use in the ERAs were typically based on the lowest values identified in the toxicity review. Therefore, risks estimated in the ERA are more likely to be overestimated than underestimated. Additionally the concentrations of aminopyralid that animals were exposed to in laboratory studies where adverse effects were seen are much generally much higher than the levels that wildlife on BLM lands would be exposed to.

39-15
U.S. Environmental Protection Agency

Comment: Herbicide treatments could also impact wildlife and livestock due primarily to direct spray, accidental spills, drift, and ingestion of contaminated vegetation, prey species, or water. Effects to animals could include death, damage to vital organs, decrease in growth, decrease in reproductive output and condition of offspring, and increased susceptibility to predation. Wildlife in particular could experience disruption of dispersal and foraging, which could expose some species to greater predation related to habitat and cover losses. Overall, terrestrial and aquatic applications of herbicides are likely to alter vegetation and have secondary indirect effects on animals, including food availability and habitat quality.

Response: Potential effects to wildlife and livestock from use of the three new active ingredients are discussed in Chapter 4 under Wildlife Resources, Summary of Herbicide Impacts, and Livestock, Summary of Herbicide Impacts. The discussions in these sections include the concerns raised in this comment. Additionally, these sections reference the 2007 PEIS, which includes lengthier discussions of the potential impacts of herbicide use on livestock and wildlife.

Environmental Consequences, Paleontological and Cultural Resources

35-02
Alaska Community Action on Toxics

Comment: These herbicides may harm the health of people who are reliant on traditional foods and medicinal plants.

Response: An HHRA was completed to determine the toxicological risks to humans associated with use of aminopyralid, fluroxypyr, and rimsulfuron. As discussed in Chapter 4 of the HHRA, the risk analysis included an assessment of exposure to the active ingredients via both dermal exposure and ingestion (drinking contaminated water and eating sprayed berries and fish). The risk assessment did not identify any health risks associated with exposure to aminopyralid, fluroxypyr, or rimsulfuron via any of these exposure scenarios.

Additionally, as discussed in the HHRA and PEIS, when herbicides are used as part of a vegetation treatment program on public lands, the BLM takes care to flag the area to be treated and to post the area with warnings about when re-entry can occur safely.

This would help prevent exposure to treated areas by those gathering traditional foods and medicinal plants following treatment.

Further measures to protect the health of people who are reliant on traditional foods and medicinal plants would be identified at the site-specific level, as appropriate, and these concerns would be considered when designing treatment projects at the local level. During the NEPA process at the local level, ongoing coordination/consultation with applicable Native American tribes, Alaska Native groups, and Alaska Native corporations would occur to ensure that concerns about effects to subsistence resources and those who utilize them are addressed.

35-13
Alaska Community Action on Toxics

Comment: To our knowledge, there have not been studies of [aminopyralid] on subsistence resources, including medicinal plants, herbs, berry plants, fish or wildlife, particularly in our traditional use areas.

Response: The BLM is also not aware of any studies of aminopyralid that specifically involve subsistence resources. However, the effects analysis in Chapter 4 of the PEIS provides a discussion of the potential impacts of aminopyralid on non-target plants, fish, and wildlife, based on information provided in the ERA for the active ingredient. These discussions provide useful information for predicting potential adverse effects to subsistence resources. Additionally, the Paleontological and Cultural Resources section of Chapter 4 includes a discussion of the potential impacts of herbicide treatments on subsistence resources. Appendix C of the PEIS is an ANILCA Section 810 Analysis of Subsistence Impacts, which provides an evaluation of the proposed project on subsistence resource in Alaska.

Risk assessments use scientific data to extrapolate risks to larger groups of plants, fish, and wildlife. The standard practice is to select surrogate species for which toxicological data are available, and use these data to determine risks to similar species. Section 6.2 of the aminopyralid ERA provides a thorough discussion of this process, with a complete list of surrogate species provided in Appendix C of that document.

35-26
Alaska Community Action on Toxics

Comment: Alaskans are particularly vulnerable to the effects of these chemicals due to our reliance on medicinal plants and traditional foods.

Response: The BLM evaluated both ecological and human health hazards in the HHRA and ERAs, and conducted an analysis of subsistence impacts pursuant to Section 810 of the ANILCA. The ANILCA analysis is included as Appendix C of the PEIS. Additionally, a report on Native American and Alaska Native Resource Uses has been provided as a supplemental report to the PEIS.

Environmental Consequences, Social and Economic Values

01-01
Public, Jean

Comment: Aminopyralid is of concern to vegetable growers, as it can enter the food chain via manure, which contains long-lasting residues of the herbicide. It affects potatoes, tomatoes, and beans, causing deformed plants, and poor or non-existent yields. Problems with manure contaminated with aminopyralid residue surfaced in the [United Kingdom (UK)] in June and July 2008, and, and the end of July 2008, Dow AgroSciences implemented immediate suspension of UK sales and use of herbicides containing aminopyralid. Approval of aminopyralid was subsequently reinstated in the UK on October 6, 2009, as reported by the UK regulatory authority, the Advisory Council on Pesticides. The reintroduction was approved "with new recommendations and a stringent stewardship programme devised to prevent inadvertent movement of

manure from farms." Despite restrictions, symptoms of aminopyralid damage were recorded on crops growing in allotments in Edinburgh, UK as recently as June 2010; inquiries traced the source of contamination to a farm supplying hay to the stables from where bags of manure had been obtained. Symptoms of aminopyralid injury to vegetable crops were reported by small farms and gardeners in Britain in July 2011.

Response: The persistence of aminopyralid in manure, and associated adverse effects to crops, are discussed in Chapter 4 of the PEIS under Social and Economic Values, Summary of Herbicide Impacts, Impacts of Aminopyralid. The PEIS states that "the BLM would follow all label restrictions to prevent impacts to crops and gardens associated with the use of this herbicide, including restrictions on grazing, where applicable. The BLM would not export manure, plant residues, or other materials that may be treated with aminopyralid for use as soil amendments."

The labels associated with herbicide formulations of aminopyralid contain extensive requirements regarding the use of the active ingredient and the management of the treated forage and subsequent manure associated with grazing animals. The BLM would incorporate the requirements stated on the label into the site-specific management of vegetation using this particular active ingredient.

03-03
Eklund, Janelle

Comment: Further, aminopyralid is of concern to vegetable growers, as it can enter the food chain via manure, which contains long-lasting residues of the herbicide…The article also states that aminopyralid can end up in gardens through manure, compost (municipal or farm-made), straw, and hay. It and several others are some of the worst of a host of next-generation herbicides. All must be avoided but aminopyralid is a grower's nightmare. If a grower is certified organic they will immediately lose their certification for three or more years. Growers, thinking they are doing right by getting municipal compost find out it is fatal later. Use of herbicides can destroy a farm's or homestead's future for many years.

Response: The persistence of aminopyralid in manure, and associated adverse effects to crops, are discussed in Chapter 4 of the PEIS under Social and Economic Values, Summary of Herbicide Impacts, Impacts of Aminopyralid. The PEIS states that "the BLM would follow all label restrictions to prevent impacts to crops and gardens associated with the use of this herbicide, including restrictions on grazing where applicable. The BLM would not export manure, plant residues, or other materials that may be treated with aminopyralid for use as soil amendments."

The labels associated with herbicide formulations of aminopyralid contain extensive requirements regarding the use of the active ingredient and the management of treated forage and manure associated with grazing animals. The BLM would incorporate these requirements into the site-specific management of vegetation using this particular active ingredient.

35-08
Alaska Community Action on Toxics

Comment: [Aminopyralid] is quite persistent in soils, with demonstrated half-lives of 32-533 days. Compost and manure contaminated with residues of aminopyralid causes damage to and economic losses of crops on which the compost or manure have been applied.

Response: The persistence of aminopyralid in soil, compost, and manure, and associated adverse effects are discussed in Chapter 4 of the PEIS. Soil persistence is discussed under Soil Resources, Impacts of Herbicide Treatments, Impacts of Aminopyralid. Persistence in compost and manure is discussed in the same section, as well as under Vegetation, Impacts of Herbicide Treatments, Impacts of Aminopyralid,

Non-Target Plants; and under Social and Economic Values, Summary of Herbicide Impacts, Impacts of Aminopyralid. The PEIS states that "the BLM would follow all label restrictions to prevent impacts to crops and gardens associated with the use of this herbicide, including restrictions on grazing, where applicable. The BLM would not export manure, plant residues, or other materials that may be treated with aminopyralid for use as soil amendments."

The labels associated herbicide formulations of aminopyralid contain extensive requirements regarding the use of the active ingredient and the management of treated forage and subsequent manure associated with grazing animals. The BLM would follow the label requirements during all treatment actions involving use of this particular active ingredient.

35-10
Alaska Community Action on Toxics

Comment: In a study of the effects of aminopyralid, crops were injured by the herbicide at soil concentrations less than the limit of quantitation (0.2 µg kg (-1)).

Response: The potential effects of aminopyralid on off-site crops are discussed in Chapter 4 of the PEIS, under Social and Economic Values, Summary of Herbicide Impacts, Impacts of Aminopyralid. The PEIS notes that "treatment buffers would be required to prevent impacts to non-target plants, which would include commercial crops and other broadleaf plants." These buffers are presented in Table 4-8 of the PEIS, and were developed from information presented in the aminopyralid ERA, which predicted risks to non-target plants under various exposure scenarios, using the best available toxicity data for the herbicide.

Environmental Consequences, Human Health and Safety

03-04
Eklund, Janelle

Comment: And what does [aminopyralid] do to the health of humans? When it gets in the food chain we are sure to ingest the very poisons we lace the plants with. Why do we have so many health issues? It's a no-brainer.

Response: Human health risks associated with use of aminopyralid are discussed in Chapter 4 of the PEIS, under Human Health and Safety. Information provided is based on the HHRA, which looked at both likely and unlikely exposure scenarios, including ingestion of plant materials and water that have been sprayed with the herbicide. The HHRA found that there are no risks to occupational or public receptors from routine use or accidental exposure scenarios, even considering worst-case exposures. As stated in Section 2.2.1.9 of the HHRA, aminopyralid is rapidly absorbed, distributed, and excreted by mammals when ingested. Tissue distribution and bioaccumulation of aminopyralid appears to be minimal.

14-03
Oregon Wild

Comment: BLM should fully disclose the effects of herbicides on adults, children, and pregnant women.

Response: Human health risks associated with aminopyralid, fluroxypyr, and rimsulfuron are discussed in Chapter 4 of the PEIS, under Human Health and Safety. Information provided is based on the HHRA that was prepared in support of the PEIS. The BLM follows the four-step risk assessment process identified by the National Academy of Science (1983) for assessing risks to human health: 1) hazard identification; 2) dose-assessment; 3) exposure assessment; and 4) risk characterization. The HHRA is included as a supplemental report to the PEIS. The HHRA calculated risk to both occupational (e.g., herbicide applicators) and public receptors, and for public receptors calculated risk to both adults and children via

various exposure pathways. Pregnant women are included in the adult population, and studies of developmental effects on the fetus are included in the development of the toxicity endpoints (described in Section 2.2 of the HHRA). None of the three herbicides presents an unacceptable risk to the public (adults, inclusive of pregnant women, or children) under any of the exposure scenarios considered. Rimsulfuron was found to have a low to moderate human health risk to adult workers under accidental exposure scenarios; these risks would be mitigated through proper handling of the herbicide, wearing appropriate personal protective equipment, and following all applicable SOPs for herbicide applications.

Environmental Consequences, Cumulative Effects Analysis

39-13
U.S. Environmental Protection Agency

Comment: The Draft PEIS utilized air quality analysis completed for the 2007 PEIS, since the proposed action does not increase the total amount of herbicide application. However, during the review of the 2007 PEIS, [US]EPA identified several issues with the air quality emissions inventory and modeling. These issues may lead to an underestimate of cumulative impacts to air quality due to lack of consideration of other management activities that will be conducted under the land management plan that potentially have impacts to air quality. Therefore, concerns regarding cumulative impacts to air quality still remain.

Response: Because the issues with the air quality inventory and modeling that were identified in 2007 have not been provided in this comment, it is difficult to respond to specific concerns. It is also not clear what "land management plan" the comment is referring to when it mentions other land management activities that have not been considered in the cumulative effects analysis. The cumulative effects analysis of the 2007 PEIS, which is incorporated into the current PEIS by reference, considered various actions by the BLM and other entities, with a focus on smoke emissions from prescribed fire and wildland fire. Smoke from fire remains the largest air quality concern on public lands, and was the focal point of the cumulative effects analysis. The amount of air quality emissions associated with vehicles and aircraft that apply herbicides is very small when compared to the amount associated with fire, and herbicide treatments that reduce wildfire risk would be expected to benefit air quality in the western states.

Consultation and Coordination, Public Involvement

28-04
Copper Country Alliance

Comment: Unless there is an urgent need to treat immediately, (again, Elodea in a water body used by boaters or float planes is an example), the 45-day public comment period should be adhered to.

Response: For site-specific NEPA analysis, the level of public comment would be determined by the local BLM office. Guidance in the NEPA BLM Handbook (Handbook H-1790-1; USDOI BLM 2008a) states that the public comment period for all draft EISs must last at least 45 days. However, Environmental Assessments are not required under CEQ regulations to be made available for public comment and review. If they are made available, most would have a 30-day public comment period.

There would be a substantial period of time between identification of a need to treat with herbicide and the treatment itself. The BLM would need to first go through the NEPA process, including consultation with agencies as needed. Following completion of the Environmental Assessment or EIS, a Pesticide Use Proposal would be prepared for the proposed treatment. Following approval of the Pesticide use Proposal, the proposed treatment would be allowed to occur.

28-05
Copper Country Alliance

Comment: Public comment periods should be well-publicized. Legal notices generally are not read by the public. There should be an article and/or attention-catching ad in a local paper and announcements on local radio stations.

Response: Thank you for your helpful insight. We will forward your comment to local Authorized Officers who are instrumental in providing local public announcements.

For the *Draft Programmatic EIS for Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States*, news releases were issued to national, state, and local news services to coincide with the release of the Draft PEIS, and notice of the availability of the draft document and the public comment period was published in the Federal Register on June 19, 2015, in accordance with federal regulations.

33-01
Wroncy, Jan, and Hale, Gary

Comment: Regarding comments on the *Draft Programmatic Environmental Impact Statement Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States*. We need more time to consider the impacts of [aminopyralid, fluroxypyr, and rimsulfuron] in light of the recent [US]EPA ruling regarding small streams. Please extend the comment period for 30 more days.

Response: The BLM received one comment requesting an extension of the public comment period. The BLM determined that a 45-day public comment period was sufficient for the Draft PEIS, considering the USEPA's recent Clean Water Rule does not change the analysis or conclusions presented in the PEIS.

Ecological Risk Assessment

29-01
Dow AgroSciences

Comment: It is also worth mentioning that picloram (Tordon 22K) is not registered for use in California but aminopyralid is registered in that state. Therefore, it is more important for those BLM land managers in California to have aminopyralid as a tool in their herbicide tool box so that they can effectively control key invasive/noxious weeds like yellow starthistle using an effective, low rate herbicide.

Response: The BLM appreciates the comments provided by the commenter, and recognizes the importance of being able to utilize vegetation management options that offer efficacious results on several of the troublesome weed species found on lands the BLM administers.

29-02
Dow AgroSciences

Comment: Regarding the potential toxicity of aminopyralid to amphibians, there appears to be some discrepancy within the [ERA]. In several areas of the document there is mention of no information on amphibian toxicity: 1. On Page 5 it states: "No toxicity studies conducted on amphibian studies were found in the literature." 2. On page 5 in Table 3-1 there is mention of "no data" for amphibian toxicity reference values. 3. On page 107 it is stated that, "No conclusions can be drawn regarding the sensitivity of amphibians to exposure to aminopyralid relative to the surrogate species selected for the ERA." 4. On page 131 in Table 7.1 it states that there is a "lack of toxicity information for amphibian and reptile species." However, on page 33 in Section 3.1.3.2 there is a review of an amphibian study in which USEPA has classified aminopyralid as practically non-toxic to aquatic-phase amphibians (USEPA2005b). See also USEPA document number MRID [Master Record Identifier] No. 46235816. Therefore, the references to a lack of data for amphibians should be corrected.

Response: The reviewer is correct that a single larval amphibian study was identified in Section 3.1.3.2 and presented in Appendix A. The sentence referencing a lack of data for amphibians on page ES-3 will be deleted and amphibians will be added to the sentence starting "Aminopyralid also has little toxic impact on…" The amphibian study information will be added to Table 3-1 under the Additional Endpoints heading. In Section 6.2.2, the text will be revised to indicate that the USEPA has classified aminopyralid as practically non-toxic to aquatic-phase amphibians (USEPA 2005b), but that no conclusions can be drawn regarding the sensitivity of adult amphibians to exposure to aminopyralid relative to the surrogate species selected for the ERA. Table 7-1 will be revised to state "Information is limited and/or not available on the toxicity of herbicides to reptile and amphibian species resulting from dietary or direct contact exposures."

29-03
Dow AgroSciences

Comment: It could be noted that all of the incidents listed in the Aminopyralid Incident Report Summary (Table 2-2 of the aminopyralid [ERA]) were early in the registration of aminopyralid. It was registered under the [US]EPA Reduced Risk Program in 2005 and the incidents were from 2006 through 2009 which indicates that applicators learned how and where to best apply aminopyralid. There were no incidents listed past 2009 – 6 years ago.

Response: Given that the dates of the incidents are provided in the Table 2-2 and therefore clearly shown in the document, the BLM feels that the suggested change to the risk assessment is unwarranted. The purpose of Section 2.4 is to disclose information about herbicide incident reports. Regardless of the validity of the suggestion that the data indicate that applicators learned how and where to best apply aminopyralid, we do not feel that it is appropriate to make this inference in the risk assessment. Additionally, including this information would not change the conclusions made in the document or the associated analysis in the PEIS.

29-04
Dow AgroSciences

Comment: In Section 7.3.1 "Degradates" it states "the lack of data on the toxicity of degradates of aminopyralid represents a source of uncertainty in the risk assessment." However, aminopyralid goes to mineralization [(carbon, oxygen, and nitrogen)] so there are no degradates to be studied. USEPA has not identified any metabolites of concern in any matrices so the uncertainty stated here does not exist.

Response: The statement referenced in this comment, from the aminopyralid ERA, is correct. Regardless of the information provided about the mineralization of aminopyralid, there is a lack of ecotoxicity data available for terrestrial and aquatic species on the degradates of aminopyralid. This lack of data represents a source of uncertainty.

29-05
Dow AgroSciences

Comment: We would also like to add that fluroxypyr poses no chronic toxicity hazard to mammals as the review of chronic data shows in the fluroxypyr [ERA] (page 28), so that should be noted in the Executive Summary (ES-3) and elsewhere throughout the document.

Response: The information in the referenced section of the fluroxypyr risk assessment (Page 3-2 [28 on the pdf], Section 3.1.2.1) indicates studies that show some chronic toxicity (kidney and growth effects) to small mammals at high doses of fluroxypyr. Therefore, we do not agree that the statement that fluroxypyr poses no chronic toxicity to mammals based on the review of chronic data is correct.

29-06
Dow AgroSciences

Comment: In Section 4.3.1.1 "Terrestrial Wildlife" it is improbable that with an LC50 [lethal concentration resulting in 50 percent mortality] of >25 µg a.i. [active

ingredient]/bee for fluroxypyr that direct applications of fluroxypyr would be above the [level of concern]. We recommend that these calculations be re-worked to be sure that there is not an error.

Response: The calculations for the pollinating insect risk quotient, assuming 100 percent absorption, were reviewed and determined to be correct. No errors were found in the calculations. The calculated dose of 41 mg acid equivalent per kilogram of body weight (based on a typical application rate) divided by the toxicity reference value of 269 mg acid equivalent per kilogram of body weight results in a risk quotient of 0.15, which slightly exceeds the most conservative level of concern of 0.1. Both the dose and the toxicity reference values calculated were confirmed as correct. As indicated in Section 4.3.1.1, it was noted that this scenario is particularly conservative because it is assumed that the insect is absorbing 100 percent of the herbicide.

29-07
Dow AgroSciences

Comment: While some aquatic plants are sensitive to fluroxypyr, its labeled uses do not include applications to control submerged and/or floating plants in aquatic sites and therefore it is highly unlikely that aquatic plants would be exposed to a level of fluroxypyr that might cause injury or harm.

Response: The risk assessments consider exposure of ecological receptors to the active ingredient in question, via various intentional and unintentional exposure mechanisms. These exposure scenarios are not limited to likely situations for exposure; they also include accidental (unlikely) exposure scenarios that are within the realm of possibility and therefore represent a worst-case scenario. In the case of aquatic plants, exposure to fluroxypyr could occur via drift or surface runoff from a nearby upland application area, if an aquatic habitat was accidentally directly sprayed (i.e., the label instructions were not followed), or if a truck or helicopter accidentally spilled its entire load of herbicide mixed for an application into an aquatic habitat. The latter two scenarios are labeled as accidental exposure scenarios, and the text of the ERA states that the spill scenarios were developed "to represent worst-case potential impacts to ponds" (Section 4.2.1.5). Therefore, the risk assessment makes it clear that it is highly unlikely that aquatic plants would be exposed to a level of fluroxypyr that might cause injury or harm. Additionally, the discussion of potential effects to aquatic plants in the PEIS under Vegetation, Impacts of Herbicide Treatments, Impacts of Fluroxypyr, Non-Target Plants includes these worst-case scenarios.

29-08
Dow AgroSciences

Comment: Just a comment, the link to this reference did not work. New York State Department of Environmental Conservation (NYSDEC). 2007. Letter to Mr. Jim Baxter of Dow AgroSciences, LLC. Re: Withdrawal of Milestone Herbicide Application (USEPA Reg. No. 62719-519) Containing the Active Ingredient Aminopyralid. Chemical Code: 005209 Available at URL: http:i/pmep.cce.cornell.edu/profiles/herb-growthred/24-d-butylate/aminopyralid/aminopyr wth 0207.pdf.

Response: We tried the link to this reference provided in the ERA and found it to work. The correct link, as given in the risk assessment is http://pmep.cce.cornell.edu/profiles/herb-growthreg/24-d-butylate/aminopyralid/aminopyr_wth_0207.pdf. The URL provided in the comment has an "i" instead of a backslash after "http:".

39-16
U.S. Environmental Protection Agency

Comment: While we appreciate the [ERA] data provided in the Draft PEIS, we recommend the risk assessment include evaluation of risks from incidents that applicants are required to report for each herbicide proposed for use e.g., wind erosion, and tailor the evaluation to local conditions so accurate risks may be known.

Response: The risk assessments were designed to be broad, and covered pesticide exposure pathways (runoff, drift, wind erosion) under a variety of different site and application conditions (slope, vegetation, weather, aerial applications, ground applications) that may be relevant across the 17 western states under consideration. Recommended treatment buffers identified in the risk assessments and PEIS may be tailored (either increased or decreased) based on local site conditions, but it is not feasible to do this type of analysis at the programmatic level.

39-17
U.S. Environmental Protection Agency

Comment: Additionally, it may be appropriate to include a broader search of the ecotoxicity data for these chemicals by also providing data from the open literature via ECOTOX (http://cfpub.epa.gov/ecotox/).

Response: As detailed in Section 3.1 of the ERAs, USEPA's on-line ECOTOX database was queried for ecotoxicity data. These data are presented in Appendix A of each pesticide ERA and were considered in the selection of the toxicity reference values presented in Table 3-1.